INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

AGENCY/UNIT:	**Bureau of Indian Affairs: Southern California Agency** **Bureau of Land Management: Palm Springs- So. Coast Field Office** **California Desert District** **U.S. Fish and Wildlife Service: Carlsbad Fish and Wildlife Service** **Office; San Diego National Wildlife Refuge Complex**
LOCATION:	**San Diego County and Riverside County, California**
DATE:	**November 17, 2003**
PREPARED BY:	**INTERAGENCY BURNED AREA EMERGENCY RESPONSE TEA**

This plan is dedicated to the individuals who lost their lives due to this incident and to all the people and families who suffered the loss of homes and property during these tragic fires.

Submitted By:_____**Date:**_____
Erv Gasser, NPS, BAER Team Leader

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART A FIRE LOCATION AND BACKGROUND INFORMATION

	Cedar	Paradise	Otay	Old
	CA-CNF-3056	CA-MVU-08143	CA-MVU-8151	CA-BDF-010329
	279,228	56,427	44,698	52,635
	San Diego	San Diego	San Diego	Riverside
Ignition Date/Manner	Human Caused	Human Caused	Human Caused	Human Caused
	Nov. 4, 2003	Nov. 13, 2003	Oct. 28, 2003	Nov. 8, 2003

**** SEE ACREAGE SUMMARY TABLE ON NEXT PAGE ****

NATURE OF PLAN

I. Type of Plan (check one box below)

v	

II. Type of Action (Check One box below)

v	
	Supplying Information For Accomplishment To Date On Work Underway

PART A - SUPPLEMENT

ACREAGE SUMMARY TABLE

	Cedar Fire	Otay Fire	Paradise Fire	Old Fire	Agency Totals
San Diego County	280059	44,699	56,427		381,185
Riverside County				90,773	90,773
BIA Trust Lands					
Barona	6,388				6,388
Capitan Grande	15,604				15,604
Cuyapaipe	5				5
Inaja-Cosmit	846				846
La Jolla			1,478		1,478
Rincon			2,303		2,303
San Pasqual			1,421		1,421
San Manuel				746	746
Santa Ysabel	53				53
Sycuan	22				22
Viejas	1,526				1,526
Bureau of Land Mgmt.	4,854	21,924	3,442		32,567
U.S. Forest Service	61,054		9,496	39,542	110,092
Fish & Wildlife Service		268			268
Military Reservations	18,311				18,311
Private	117,070	16,676	32,056	26,649	192,451
City of San Diego	11,368	2,219	4,067		17,654
San Diego County	7,571	402	1,656		9,629
State of California	3,369	3,202			6,571
Calif. Fish & Game	332		421		753
Calif. Parks & Rec.	27,364			2,812	30,176
CalTrans	1,190				1,190
Corp of Engineers				3	3
Water District	2,702	8	87		2,797
School District	248				248
Fire District	8				8
Special District	60				60
Other Federal	106				106
Unknown	8				8
Totals	**280,059**	**44,699**	**56,427**	**90,773**	**471,958**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART B. TEAM ORGANIZATION

POSITION	TEAM MEMBER / AGENCY
Team Leader	Erv Gasser, NPS Dave Smith, FWS (Deputy)
Administrative Support	Jennifer Wohlgemuth, BLM
Public Information Officer/Safety	Randy Draeger, USFS
Operations	Dave Raney, BIA, (Lead) Maury Williams, BIA Gavin Lovell, BLM John Perez, NPS Chris Holbeck, NPS
Archaeology	Dan Hall, BIA Carla Burnside, FWS Chuck James, BIA
Tribal Liason	Rich Schwab, BIA
Soil and Watershed	Michael Parenti, Contractor Susie Loadholt, Contractor Bill Sims, BIA Becca Smith, USFS Shauna Jensen, USFS Megan Estep, FWS Brian Rasmussen, NPA
Vegetation	Jim Youtz, BIA, (Lead) Bruce Card, BIA Wayne Waquiu, BIA Sandra Marquez, FWS John DiGregorio, FWS
Wildlife	Karen Hayden, USFS (Lead) Dave Wooten, BIA
Environmental Protection & Compliance	Bill Walker, BIA Richard Hadley, FWS Daryl Martinez, BIA
GIS	Carl Hardiniski, BIA, (Lead) Rachel Endfield, White Mountain Apache Tribe Chris English, BIA Bob Beckworth, BIA Jennifer McCollum, NPS Richard Easterbrook, NPS Viktoria Magnis, NPS Gerald Barnes, Passamaquoddy Tribe Marissa Stradley, Confederated Tribes of Warm Springs
Photographer	Kari Greer, Contractor
IT Specialist / Documentation	Richard Inman, BIA

Miscellaneous Support Personnel

Don Henry	System Administrator, FWS
Emilie Luciani	GIS Specialist, FWS
Marlene Marcellay	Contracting Officer, BIA
Traci Thaler	Contracting Officer, BLM
Ann Robb	Clerical Staff, FWS
Lori Halcro	PIO, USFS
Pennie Custer	PIO, USFS
Steve Kliest	PIO, CDF
Dawn Grim	PIO, USFS
Nancy Gardner	PIO, USFS
Ben Leach	PIO, USFS
David Widmark	PIO, USFS

IV. Technical Advisors: (Note: Resource Advisors are individuals who assisted the BAER Team with the preparation of this plan. See Part H of this plan for a full list of agencies and individuals who were consulted or otherwise contributed to the development of this plan.

Rudy Ballon	Environmental Director, San Pasqual Reservation
Mike Hollingsworth	Environmental Specialist, San Manual Reservation
John DiGregoria	Biologist, Fish & Wildlife Service
Dave Wooten	ES Coordinator, BIA
Lisa Northrop	Natural Resource Officer, BIA
Stephen Fillmore	Fuels Specialist, BIA
Therese Anderson	Entomologist, FWS
John DiGregoria	Biologist, FWS
Rick Fox	Biologist, City of San Diego
Thomas Oberbauer	Resource Manager, County of San Diego

Theresa Stewart	Biologist, CDFG
Angela Peterson	Rehabilitation Specialist, CDF
Yvonne Jones	Agency Rep., BIA
Thom Porter	Rehabilitation Specialist, CDF
Sam Kolb	Public Works Director, Rincon Reservation
Leroy Mendoz	Roads Supervisor, La Jolla Reservation
Jack Musick	Vice Chairman, La Jolla Reservation
Alan Sweeny	Development & Legal Affairs, Rincon Reservation
Robert Marales	Water Master, San Pasqual Reservation
Roland Escarcega	Water Technician, San Pasqual Reservation
Mel Chamberlain	Operating Engineers Trust (at San Pasqual)
Bo Mazzetti	Vice Chairman, Rincon Reservation
Jay Henshaw	Regional BAER Coordinator, BIA
Grey Hill	NEPA Planning Coodinator, BLM
Jack Dangermond	President, ESRI
Susan Rudy	PIO, CNF
Diana Brink	California State ESR Coordinator, BLM

PART C EMERGENCY STABILIZATION

Emergency Stabilization Objectives:

- **To prescribe cost effective post-fire stabilization measures necessary to protect human life, public health and safety, property, and critical cultural and natural resources.**
- **To promptly stabilize and prevent further degradation to affected resources on lands within the fire perimeter or areas affected directly by wind or water erosion from the burned areas.**
- **To repair damages caused by fire suppression operations.**
- **To implement emergency stabilization treatments in accordance with approved land management plans and policies, and all relevant federal, state, and local laws and regulations.**
- **To implement emergency stabilization treatments prior to the first damaging storms.**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CAIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
SUPPRESSION SPECIFICATIONS FOR ALL JURISDICTIONS

ACTIVITIES REQUIRING LINE OFFICER'S APPROVAL Fire Suppression Damages (charged to Fire Suppression)	COST
SUPPRESSION	
#1, S-1, Dozerline Repair	F
#2, S-2, ICP Repair	F
#3, S-3, Handlline Repair	F
#4, S-4, T&E Habitat Irrigation System Repair	$4,200

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
#1, O-1, IMPLEMENTATION LEADER	$239,079
#2, O-2, PLAN PREPARATION	$479,302
SUBTOTAL	$718,381
ACTIVITIES REQUIRING BIA NATIONAL APPROVAL Long-Term Rehabilitation	**COST**
NONE	

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
BARONA RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#13, W-3, Debris Basin Design	43,107
#16, W-4, Hydromulch	622,050
#14, W-2, Culvert Cleaning	8,340
#17, W-5, Residence Sediment & Debris Control	63,343
#19, W-7, Soil Sampling	5,000
#20, W-8, Post-Flood Event Road Clean-Up	59869
#23, W-11, Flood Hazard Warning Signs	790
#24, W-12, Structural Protection (K-Rails)	44,563
#25, W-13, Sandbag Protection	6,886
#38, W-14, Diversion Channel Improvement	847
#32, V-5, Imminent Tree Hazard Surveillance/Mitigation	63,075
SUBTOTAL	**$917,870**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
CAPITAN GRANDE RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#15, W-4, Hydromulch	435,000
#14, W-5, Residence Sediment and Debris Control	4,180
#22, W-10, Culvert Removal and Replacement	9,900
#20, W-8, Post-Flood Event Road Clean-Up	39,085
SUBTOTAL	$488,165

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
CUYAPAIPE RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
No Treatments	
SUBTOTAL	

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
INAJA FIRES

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#13, W-3, Debris Basin Design	104
#14, W-5, Residence Sediment and Debris Control	4,180
#22, W-10, Culvert Removal and Replacement	8,690
#4, C-2, Inaja Cemetery Protection	7,898
#20, W-8, Post-Flood Event Road Clean-Up	2,482
SUBTOTAL	**$24,354**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
LA JOLLA RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
PARADISE FIRE	
#6, S-6, Bridge Inspection	1,800
#14, W-5, Residence Sediment and Debris Control	8,340
#31, V-1, Aerial Seeding	62,893
#35, V-2, Revegetation Monitoring	1,083
#20, W-8, Post-Flood Event Road Clean-Up	2,171
SUBTOTAL	**$76,287**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
RINCON RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
PARADISE FIRE	
#10, S-4, T&E Habitat Irrigation Systems Repair	4,200
#13, W-3, Debris Basin Design	1,040
#15, W-4, Hydromulch	10,875
#14, W-2, Culvert Cleaning	8,340
#17, W-5, Residence Sediment & Debris Control	39,600
#23, W-11, Flood Hazard Warning Signs	631
#24, W-12, StructuralProtection (K-Rails)	4,369
#25, W-13, Sandbag Protection	8,141
#38, W-14, Diversion Channel Improvements	847
#42, W-18, Prevent Pipeline Damage	35,200
#31, V-1, Aerial Seeding	5,469
#35, V-2, Revegetation Monitoring	91
#32, V-5, Imminent Tree Hazard Surveillance/Mitigation	13,923
#20, W-8, Post-Flood Event Road Clean-Up	1,861
SUBTOTAL	**$134,587**

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2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
SAN PASQUAL RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
PARADISE FIRE	
#11, S-5, Road Safety	318,678
#14, S-5, Culvert Clearing	8,340
#17, W-5, Residence Sediment & Debris Control	106,089
#22, W-10, Culvert Removal and Replacement	8,005
#24, W-12, Structural Protection (K-Rails)	13,980
#25, W-13, Sandbag Protection	2,725
#40, W-16, Sediment Basin Maintenance	100,000
#35, V-2, Revegetation Monitoring	10
#33, V-3, Ecological Stabilization	109
#32, V-5, Imminent Tree Hazard Surveillance/Mitigation	53,572
#20, W-8, Post-Flood Event Road Clean-Up	9,616
SUBTOTAL	**$622,124**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
SAN MANUAL RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
OLD FIRE	
#15, W-3, Debris Basin Design	16,800
#16, W-4, Hydromulch	92,437
#14, W-2, Culvert Cleaning	8,340
#17, W-5, Residence Sediment & Debris Control	3,168
#24, W-12, Structural Protection (K-Rails)	44,563
#25, W-13, Sandbag Protection	165,124
#38, W-14, Diversion Channel Improvement	7,056
#39, W-15, Erosion Control Blanket	$32,500
#40, W-16,Sediment Basin Maintenance	$300,000
#41, W-17, Culvert Armoring	5,280
#32, V-5, Imminent Tree Hazard Surveillance/Mitigation	1,123
#3, C-1, San Manuel Cemetery Protection	6,777
#20, W-8, Post-Flood Event Road Clean-Up	15,510
SUBTOTAL	$698,668

INTERAGENCY
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2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
SANTA YSABEL RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL **Emergency Stabilization Requests (Charged to ESR)**	**COST**
CEDAR FIRE	
SUBTOTAL	

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
SYCUAN RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#24, W-12, Structural Protection (K-Rails)	6,990
SUBTOTAL	**$6,990**

INTERAGENCY
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2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF INDIAN AFFAIRS -- SOUTHERN CALIFORNIA AGENCY
VIEJAS RESERVATION

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#13, W-3, Debris Basin Design	13,299
#14, W-2, Culvert Cleaning	8,340
#18, W-6, Dam Inspection	4,020
#22, W-10, Culvert Removal and Replacement	3,425
#23, W-11, Flood Hazard Warning Signs	790
#24, W-12, Structural Protection (K-Rails)	47,184
#25, W-13, Sandbag Protection	16,258
#35, V-2, Revegetation Monitoring	213
#33, V-3, Ecological Stabilization	1,033
#32, V-5, Imminent Tree Hazard Surveillance/Mitigation	5,307
#20, W-8, Post-Flood Event Road Clean-Up	19,543
SUBTOTAL	**$119,412**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

PART D - SUMMARY OF APPROVAL AUTHORITIES
BUREAU OF LAND MANAGEMENT --

ACTIVITIES REQUIRING NATIONAL OFFICE APPROVAL Emergency Stabilization Requests (Charged to ESR)	COST
CEDAR FIRE	
#1, O-1, Implementation Leader (non-fire specific)	64,622
CEDAR FIRE TOTAL	
OTAY FIRE	
#11, S-5, Road Safety	9,123
#37, S-8, Boundary Fence	33,292
#21, W-18, Replace Culverts with Rolling Dips	18,000
#5, WL-1, T&E Species Monitoring	18,500
#35, V-2 Revegetation Monitoring	1,422
#33, V-3, Ecological Stabilization	7,258
#34, V-4, Revegetation	55,808
#20, W-8, Post-Flood Event Road Clean-Up	65,142
OTAY FIRE TOTAL	$208,545
PARADISE FIRE	
#31, V-1, Aerial Seeding	383,132
#35, V-2, Revegetation Monitoring	7,096
PARADISE FIRE TOTAL	$390,228
OLD FIRE	
#37, S-8, Boundary Fence	1,110
#35, V-2, Revegetation Monitoring	719
OLD FIRE TOTAL	$1,829
BUREAU OF LAND MANAGEMENT TOTAL – ALL FIRES	$664,114

Status Code: C=Completed; O=Ongoing; P=Planned

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
PINES FIRE

PART D - SUMMARY OF APPROVAL AUTHORITIES
FISH AND WILDLIFE SERVICE

ACTIVITIES REQUIRING REGIONAL OFFICE APPROVAL **Fire Suppression Damages (charged to Fire Suppression)**	**COST**
OTAY FIRE	
#36, S-7, Replace Refuge Closed Area Signs	**1,050**
#37, S-8, Boundary Fence	**11,098**
#5, WL-1, T&E Species Monitoring	**3,700**
FISH AND WILDLIFE SERVICE TOTAL - ALL FIRES	**$15,848**

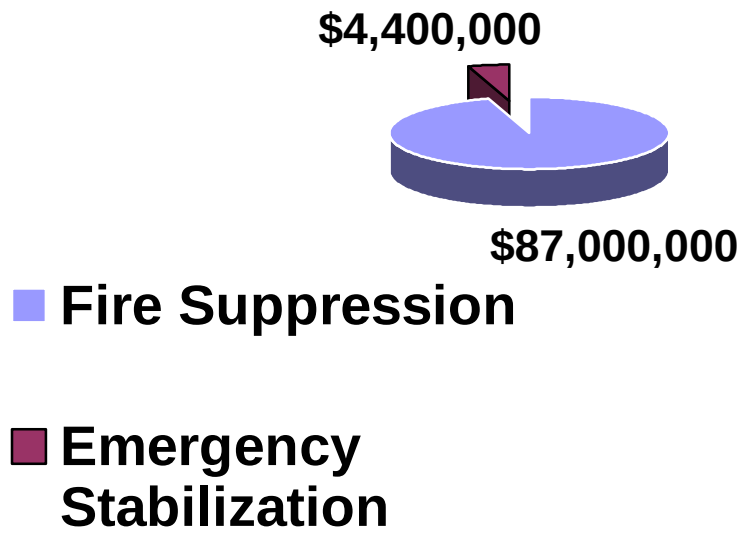
Status Code: C=Completed; O=Ongoing; P=Planned

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

PART E SUMMARY OF ACTIVITIES

The SUMMARY OF ACTIVITIES table identifies *trackable* rehabilitation costs charged or proposed for funding from fire suppression rehabilitation, emergency fire rehabilitation, emergency watershed protection, agency operations, and other. Only trackable expenditures are displayed in the total cost column. They are coded with the appropriate cost authority. The total cost of the rehabilitation effort to date, excluding the costs absorbed by the fire (fire crew, labor and associated overhead) is displayed as either Fire Suppression Rehabilitation (**F**), Emergency Fire Rehabilitation (**EFR**), Emergency Watershed Protection (**EWP**), or Agency Operations/Other (**OP/O**).

2003 SOUTHERN CALIFORNIA FIRES



PART E – SUMMARY OF ACTIVITIES –
2003 SOUTHERN CALIFORNIA FIRES

PART E. COST SUMMARY TABLE

	SPECIFICATION TOTALS				
JURISDICTION	FIRE			R	TOTALS
Bureau of Indian Affairs					**$3,743,326**
Bureau of Land Management					**$663,400**
Fish & Wildlife Service					**$15,848**
TOTAL COST					**$4,427,324**
COST: F=Suppression; EFR=Long-term Rehab.; Base Funding					

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

PART E – SUMMARY OF ACTIVITIES – COST SUMMARY TABLE – BUREAU OF INDIAN AFFAIRS
2003 SOUTHERN CALIFORNIA FIRES

TREATMENT SPECIFICATION	UNIT	UNIT COST	# OF UNITS	COST BY FUND SOURCE			IMPLEMENTATION METHOD	SPECIFICATION TOTAL
				F	ES	EWP		
CEDAR FIRE								
S-2, ICP/Helibase Repair	Job	0	1		0		F	**0**
W-1, Channel Clearing	Feet	$4.15	13,625		$56,510		P, C	**$56,510**
W-2, Culvert Clearing	Culvert	$834	30		$25,030		C	**$25,030**
W-4, Hydromulch	Acre	$2,175	486		$1,057,050		C	**$1,057,050**
W-5, Residence Sediment and Debris Control	Site	$1,584	40		$63,343		P, C	**$63,343**
W-6, Dam Inspection	Job	$4,020	1		$4,020		C	**$4,020**
W-7, Soil Sampling	Sample	$5,000	1		$5,000		C	**$5,000**
W-8, Post-Flood Event Road Clean-Up	Mile		39		$120,979		C	**$120,979**
W-10, Culvert Removal and Replacement	Each	$8,005	3		$23,015		C, M	**$23,015**
W-11, Flood Hazard Warning Signs	Each	$158	10		$1,578		C, M	**$1,578**
W-12, Structural Protection (K-Rails)	Each	$874	113		$98,737		C, M	**$98,737**
W-13, Sandbag Protection	Each	$3.30	7,008		$23,145		P, M	**$23,145**
W-14, Diversion Channel Improvement	Feet	$2,941	90		$847		C	**$847**
V-2, Re-vegetation Monitoring	Acres	$2.54	84		$213		P	**$213**
V-3, Invasive Species Control	Acres	$27.18	38		$1033		P, C	**$1033**
V-5, Imminent Tree Hazard Surveillance/Mitigation	Acres/Trees				$68,382		C, P, M	**$68,382**
C-2, Inaja Cemetery Protection	Feet	$13.86	570		$7,898		C, A	**$7,898**
Total for Cedar Fire								**$1,556,780**
PARADISE FIRE								
S-3, Hand Line Repair	Miles	0	N/A	0			F	**$0**
S-4, T&E Habitat Irrigation System Repair	Job	$4,200	1	$4,200			C	**$4,200**
S-5, Road Safety	Feet/Signs		2000 ft, 20 signs		$318,678		C	**$318,678**
S-6, Bridge Inspection	Job	$1,800	1		$1,800		C	**$1,800**
W-1, Channel Clearing	Feet	$4.15	250		$1,040		P, C	**$1,040**
W-2, Culvert Clearing	Culvert	$834	30		$25,030		C	**$25,030**
W-4, Hydromulch	Acre	$2,175	5		$10,875		C	**$10,875**
W-5, Residence Sediments & Debris Control	Site	$1,584	92		$145,689		C	**$145,689**
W-8, Post Flood Event Road Clean UP	Mi		4.4		$13,648			$13,648
W-10, Culvert Removal and Replacement	Each	$9,005	1		$9,005		C, M	**$9,005**
W-11, Flood Hazard Warning Signs	Each	$158	4		$631		C, M	**$631**
W-12, Structural Protection (K-Rails)	Each	$874	21		$18,349		C, M	**$18,349**
W-13, Sandbag Protection	Each	$3.30	3,290		$10,865		P, M	**$10,865**
W-14, Diversion Channel Improvement	Feet	$2,941	90		$847		C	**$847**
W-16, Sediment Basin Maintenance	Cubic Yard	$10	10,000		$100,000		C	**$100,000**
W-18, Prevent Pipeline Damage	Each	35,200	1		$35,200		C	**$35,200**

V-1, Aerial Seeding	Acres	$151.92	450		68,362		C,P	68,362
V-2, Re-vegetation Monitoring	Acres	$2.54	468		$1,184		P	**$1,184**
V-3, Invasive Species Control	Acres	$27.18	4		$109		C	**$109**
V-5, Imminent Tree Hazard Surveillance/Mitigation	Acres/Trees				$67,495		C	**$67,495**
Total Paradise FIre							C	**$833,007**
OLD FIRE								
W-3, Debris Basin Design	Assessment	$16,800	1		$16,800		C	**$16,800**
W-4, Hydromulch	Acre	$2,175	42.5		$92,437		C	**$92,437**
W-2, Culvert Clearing	Culvert	$834	10		$8,340		C	**$8,340**
W-5, Residence Sediment and Debris Control	Site	$1,584	2		$3,168		P, C	**$3,168**
W-8, Post-Flood Event Road Clean-up	mile		5		$15,510		C	$15,510
W-12, Structural Protection (K-Rails)	Each	$874	51		$44,563		C, M	**$44,563**
W-13, Sandbag Protection	Each	$3.30	50,000		$165,124		P, M	**$165,124**
W-14, Diversion Channel Improvements	Feet	$2,941	750		$7,046		C	**$7,046**
W-15, Erosion Control Blanket	Job	32,500	1		$32,500		P, M	**$32,500**
W-16, Sediment Basin Maintenance	Cubic Yard	$10.00	30,000		$300,000		C	**$300,000**
W-17, Culvert Armoring	Each	2,640	2		$5,280		C, M	**$5,280**
V-5, Imminent Tree Hazard Surveillance/Mitigation	Acres/Trees				$1,123		C,P	**$1,123**
C-1,San Manuel Cemetery Protection	Feet	$9.04	750		$6,777		C	**$6,777**
Total Old Fire								**$698,668**
#1, O-1, Implementation Leader	**Leader**	$175,567	1		$175,567		C, P	**$175,567**
#2, O-2, Plan Preparation	**Plan**	$6,391	75		$479,302		P	**$479,302**
Total Other								**$654,869**
GRAND TOTAL BIA								

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

PART E – SUMMARY OF ACTIVITIES – COST SUMMARY TABLE – BUREAU OF INDIAN AFFAIRS – Non-Fire Specification
2003 SOUTHERN CALIFORNIA FIRES

TREATMENT SPECIFICATION	UNIT	UNIT COST	# OF UNITS	COST BY FUND SOURCE			IMPLEMENTATION METHOD	SPECIFICATION TOTAL
				F	EWP/O	ESR		
O-1, Implementation Leader	**LEADER**	**$175,567**	**1**			**$175,567**	**P**	**$175,567**
O-2, Plan Preparation	**Plan**	**$479,302**	**1**			**$479,302**	**P**	**$479,302**
TOTALS						**$654,869**		**$654,869**

COST: F=Fire Suppression Account; EWP/O=Emergency Watershed Program/Other; ESR=Emergency Stabilization and Rehabilitation

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

PART E – SUMMARY OF ACTIVITIES – COST SUMMARY TABLE – BUREAU OF LAND MANAGEMENT
2003 SOUTHERN CALIFORNIA FIRES

TREATMENT SPECIFICATION	UNIT	UNIT COST	# OF UNITS	COST BY FUND SOURCE			IMPLEMENTATION METHOD	SPECIFICATION TOTAL
				F	ES	EWP		
PARADISE FIRE								
V-1, Aerial Seeding	Acres	151.92	3,254		$383,132		P	**$383,132**
V-2, Re-vegetation Monitoring (incl. Other Lands)	Acres	$2.54	2,804		$7,096		P	**$7,096**
								0
Paradise Fire Total								**$390,228.00**
OLD FIRE								
S-8, Boundary Fence	Miles	$11,098	0.1		$1,110		C	**$1,110**
V-2, Re-vegetation Monitoring	Acres	$2.54	284		$719		P	**$719**
								0
Old Fire Total								**$1,829.00**
OTAY								
S-5, Road Safety	Site	$9,123	1		$9,123		C	**$9,123**
S-8, Boundary Fence	Mile	$11,098	3		$33,292		C	**$33,292**
WL-1, T&E Species Monitoring	Site	$3,700	5		$18,500		P, C	**$18,500**
W-8, Post-Flood Event Road Clean-Up	Mile		21.0		$65,142		C	$65,142
W-9, Replace Culverts with Rolling Dips	Rolling Dips	$900	20		$18,000		C	**$18,000**
V-2, Re-vegetation Monitoring	Acres	$2.54	562		$1,422		P	**$1,422**
V-3, Invasive Species Control (Stabilization)	Acres	$27.13	267		$7, 258		P, C	**$7, 258**
V-4, Invasive Species Control (Reveg)	Acres	$223.23	250		$55,808		P, C	**$55,808**
Otay Fire Total								**208,545**
OTHER								
O-1, Implementation Leader	Leader	$63,512	1		$63,512		C, P	**$63,512**
BUREAU OF LAND MANAGEMENT GRAND TOTALS								**$664,114**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

PART E – SUMMARY OF ACTIVITIES – COST SUMMARY TABLE – u.S. FISH AND WILDLIFE SERVICE
2003 SOUTHERN CALIFORNIA FIRES

TREATMENT SPECIFICATION	UNIT	UNIT COST	# OF UNITS	COST BY FUND SOURCE			IMPLEMENTATION METHOD	SPECIFICATION TOTAL
				F	ES	EWP		
OTAY								
#5, WL-1, T&E Species Monitoring	Site	$3,700	1		$3,700		P, C	**$3,700**
Otay Fire Total								**$3,700**
CEDAR								
#36, S-7, Replace Closed Area Signs	Sign	$35	30		$1,050		C	**$1,050**
#37, S-8, Boundary Fence	Miles	$11,098	1		$11,098		C	**$11,098**
Cedar Fire Total								**$12,148**
Total – Fish & WiLDLIFE SerVICE								**$15,848**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**IMPLEMENTATION LEADERS**	**JURSIDICTIONS:**	**BIA, BLM**
PART E: LINE ITEM:	**O-1, Implementation Leader**	**FISCAL YEAR:**	**2004, 2005, 2006**
ESR REFERENCE #:	**8.5 Project Management**	**SPECIFICATION TYPE:**	**ESR**

I. WORK TO BE DONE

A. General Description:

Provide funding to contract on the open market the basic salary and indirect costs of the implementation leader position, who will provide project management for the emergency stabilization and rehabilitation treatment specifications implemented on Bureau of Indian Affairs administered lands as described in the Southern California Fires of 2003, Burned Area Emergency Response (BAER) plan. This specification also provides for the BLM hiring of a GS-11 Implementation Leader for implementation of treatments proposed for BLM lands impacted in the Southern California Fires.

B. Location (Suitable) Sites:

The treatment specifications are prescribed and will be implemented on BIA administered lands within the jurisdiction of the Southern California Agency and BLM lands for the fires described in the Southern California Fires of 2003, Burned Area Emergency Response (BAER) plan. The BIA contracted Implementation Leader and BLM Implementation Leader will coordinate treatments such as seeding where practical to ensure uniform application of treatments across jurisdictional boundaries and to reduce costs of mobilization and application.

C. Design/Construction Specifications:

1. The Implementation Leader(s) will coordinate all aspects of emergency stabilization and rehabilitation work approved in the Southern California Fires of 2003, Burned Area Emergency Response Plan including the contracting of treatment specifications and activities, administering contracts, documenting treatments installed, maintaining financial tracking of costs, reporting rehabilitation progress, submitting supplemental requests for funding, ensuring the completion of all approved treatments, and coordinating with the Southern California Agency, BLM, and other affected agencies, and private landowners.

2. The Implementation Leader(s) will contract and coordinate on-the-ground implementation of treatments including site orientation of contractors, developing daily/weekly work plans for contractors/crews, and supervising work.

3. The Implementation Leader(s) will monitor the work to ensure compliance with all relevant Federal laws and regulations. Such laws and regulations include but are not limited to NEPA, NHPA, and all OSHA regulations and safety standards.

4. The Implementation Leader(s) will provide semi-annual accomplishment reports due October 1 and April 1 detailing percent accomplishment for each project specification, dates of completion, funds expended, quality control inspection reports, and treatment effectiveness monitoring reports.

5. At completion of the three-year funding period the Implementation Leader(s) will prepare a final accomplishment report. The final report will summarize all data requested in the semi-annual reports and provided a comprehensive and objective compendium of lessons learned of the treatment effectiveness of the prescribed treatment specifications based on the prescribed monitoring plans found in the Southern California Fires of 2003, Burned Area Emergency Response Plan. The report will be provided in hard copy and electronic formats that will be distributed within the United States Government and will be made available to the public on United States Government administered websites. None of the reports will be considered proprietary to the contracted Implementation Leader or their associated firms.

6. The terms of the BIA Implementation Leader's contract will not exceed the three year term of the Southern California Fires of 2003 Burned Area Emergency Rehabilitation Plan and may be terminated at any time within the three year period for failure to achieve the prescribed emergency treatments within their specified time frames. To further clarify, all approved emergency stabilization treatments must be completed within one year of the date of control of the fire for the specific fire for which the treatment is prescribed. All approved rehabilitation treatments must be completed within three years of the control date of the fire for the treatment specification for which the fire was prescribed. The BLM Implementation Leader will be funded for one year with the option to request additional funds dependent upon the effectiveness of treatments as determined by the results of treatment monitoring.

7. Funding for implementing treatment specifications will only be provided on a cost reimbursement basis except for mutually agreed upon start up costs as pre-approved by a warranted contracting officer and for a case by case basis of supplies and materials as pre-approved by a warranted contracting officer.

8. The Implementation Leader will comply with all federal labor laws. Overtime must be approved in advance. Overtime

will not exceed ten hours in a fourteen-day pay period. Payroll records must be submitted quarterly for documentation purposes.

D. Purpose of Treatment Specification:
The intent of this specification is to provide fiscal support for proper administration of the short and long-term emergency stabilization and rehabilitation program.
E. Treatment Effectiveness Monitoring
The Implementation Leader(s) will conduct review of projects, financial accountability, and oversight and provide written and electronic monitoring reports as prescribed within the BAER Plan.

II. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
12 months @ $57,512 for 1st year (BLM)	$57,512
TOTAL PERSONNEL SERVICE COST	$57,512
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Misc. equipment rental @ $3,000 X 3 years (BIA)	$9,000
Misc. equipment rental @ $3,000 (BLM)	$3,000
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	$12,000
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Misc. materials and supplies @ $3,000 X 3 years (BIA)	$9,000
Misc. materials and supplies @ $3,000 (BLM)	$3,000
TOTAL MATERIAL AND SUPPLY COST	$12,000
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Implementation Leader:	
12 months @ $57,512 for 1st year (Comparable to a GS-11 +. 27 % EBC)	$57,512
3 months @ $14,378 for 2nd year	$14,378
3 months @ $14,378 for 3rd year	$14,378
Administrative Support: 12 months @ $47,533 for 1st year (Comparable to a GS-9 + .27 % EBC)	$ 47,533
3 months @ $11,883 for 2nd year	$11,883
3 months @ $11,883 for 3rd year	$11,883
TOTAL CONTRACT COST	$157,567

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	LEADER	$87,279	2	$174,557	ESR	C/P
2005	LEADER	$32,261	1	$32,261	ESR	C
2006	LEADER	$32,261	1	$32,261	ESR	C
TOTAL	LEADER	$239,079	2	$239,079	ESR	C/P

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	

2. Documented cost figures from similar project work obtained from local agency sources.	C/P
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

III. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Executive Summary for details on transition of implementation by Implementation Leaders.

IV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA	1	$175,567
BLM	1	$63,512
TOTALS BY JURISDICTION BY FIRE		
BIA	1	$175,567
BLM	1	$63,512
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	1	$175,567
BLM	1	$63,512
GRAND TOTALS	2	**$239,079**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**PLAN PREPARATION**	**JURSIDICTIONS:**	**All Jurisdictions**
PART E: LINE ITEM:	**O-2, Plan Preparation**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.1**	**SPECIFICATION TYPE:**	**ES**

V. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

To prepare the Burned Area Emergency Response Plan for Department of Interior and tribal trust lands affected by the 2003 Southern California Fires.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

This specification is an activity that does not occur in explicit treatment sites.

C. Provide and Number Detailed Design/Construction Specifications

1. Conduct a detailed assessment of the burn severity and determine fire impacts that need to be managed or mitigated in order to protect life and property and conserve trust resources. This will be in accordance with appropriate policy and regulations.
2. Write specifications based on assessment recommendations.
3. Submit the plan for approval and secure funding from appropriate sources.
4. Per policy, complete annual reports with monitoring narratives and cost details.

D. Describe Purpose of Treatment Specification – What Resource will be Protected

The purpose of this specification is to prepare a comprehensive Burned Area Emergency Response Plan to assess and prescribe treatment to mitigate post fire effects on Department of Interior and tribal trust lands.

E. Describe Treatment Effectiveness Monitoring

The plan details monitoring for treatment effectiveness as prescribed for each treatment specification. Annual and final reports will be prepared to document the treatment monitoring.

VI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item
Do not include contract personnel costs here (see contractor services below).

Personnel	Hourly Rate	Total Hours	Cost
Team Leader	$36.00	140	$11,880.00
Asst. Team Leader	$32.00	24	$4,416.00
Tribal Liaison	$32.00	140	$10,560.00
Operations	$32.00	140	$10,560.00
Operations	$30.00	126	$8,130.00
Operations	$38.00	140	$12,540.00
Operations	$28.00	112	$5,684.00
Operations	$28.00	112	$5,684.00
Forester	$28.00	140	$9,240.00
Forester	$32.00	140	$10,560.00
Forester	$28.00	140	$9,240.00

Personnel	Hourly Rate	Total Hours	Cost
Vegetation	$28.00	140	$9,240.00
Agency Rep	$38.00	16	$1,824.00
Vegetation	$30.00	140	$9,900.00
Wildlife	$38.00	140	$12,540.00
Wildlife	$30.00	140	$9,900.00
Documentation	$32.00	140	$10,560.00
Photographer	$30.00	140	$9,900.00
Hydrologist	$28.00	140	$9,240.00
Hydrologist	$30.00	140	$9,900.00
Hydrologist	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Archeologist	$30.00	42	$6,090.00
Archeologist	$30.00	140	$9,900.00
Archeologist	$30.00	140	$8,760.00
Compliance	$30.00	140	$9,900.00
Compliance	$30.00	140	$9,900.00
Compliance	$30.00	112	$5,580.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$25.00	124	$6,656.25
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
Admin Support	$30.00	42	$6,090.00

TOTAL PERSONNEL SERVICE COST	**COST/ITEM**
	$373,074

VII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	**$373,074**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
	$0
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$0**

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Print 75 plans at $25 per plan = $1,875 **Purchase miscellaneous office supplies, $500**	**$1,875** **$500**
TOTAL MATERIAL AND SUPPLY COST	**$2,375**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
41 team members, @ $169 per day X 679 man days	**$112,217**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Plan**	**$6,391**	**75**	**$479,302**	**ES**	**P**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	P/M
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

VIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Detailed cost estimate worksheets.

IX. TOTAL COST BY JURSIDICTION

JURISDICTION	**UNITS TREATED**	**COST**
All Jurisdictions		**$479,302**
TOTAL COST		**$479,302**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**SAN MANUEL RESERVATION CEMETERY EROSION CONTROL**	**JURSIDICTIONS:**	**BIA-SMA**
PART E: LINE ITEM:	**C-1 SAN MANUEL CEMETERY PROTECTION**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3 CULTURAL RESOURCES**	**SPECIFICATION TYPE:**	**ES**

X. WORK TO BE DONE

A. General Description:

The San Manuel Reservation Cemetery is located on the southern slopes of the reservation lands. The steep slope behind the north side of the cemetery was completely denuded of vegetation by the fire and the cemetery will experience sheet wash and possibly sediment flows coming from this slope. The cemetery appears to have experienced drainage problems in the past. A grass covered shallow swale incorporated into the landscape design diverts water from this slope and from an adjacent dozer road into a drain in the east side of the cemetery. The sand bags will protect the cemetery from water inundation and sediment flows until vegetation on the adjacent steep slope has recovered.

B. Location (Suitable) Sites:

San Manuel Reservation Cemetery, San Bernardino County. GPS Coordinates WGS 84 Zone 11/ N 3641379 / E 528077

C. Design/Construction Specifications:

1. Place a row of sand bags (2 wide and 2 high) for 150 feet along the base of the steep slope behind the cemetery. Bags should be placed parallel to the existing concrete curb that lines the perimeter of the cemetery and should extend from the end of the concrete block fence on the west side of the cemetery until they intersect with the small v-ditch cut into the north side of the old dozer line on the east side.
2. Place sand bags (2 wide and 3 high) above and around two sides of the drain in the southeast corner of the cemetery. Sand bags on the north side of the drain should be placed so that the cemetery plot nearest the drain is excluded from water entering the drain.

D. Purpose of Treatment Specification:

To prevent erosion of, and sediment flows within the cemetery during rain events.

E. Treatment Effectiveness Monitoring

Tribal Environmental Department personnel will monitor effectiveness of treatments after rainstorm events.

XI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
$30./HR X 10 Hours X 1 Fiscal Year	**$300.00**
TOTAL PERSONNEL SERVICE COST	**$300.00**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
750 sand bags @ $0.15/bag X 1 FY	**$113.00**
Sand @ $13.00/yd x 28 cubic yards x 1 FY	**$64.00**
TOTAL MATERIAL AND SUPPLY COST	**$477.00**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
12 person crew @ $3000.00/day x 2 days	**$6000.00**
TOTAL CONTRACT COST	**$6000.00**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	Feet	$9.04	750	$6777.00	ESR	C
2005						
2006						
TOTAL		$9.04		$6777.00		

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	C
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Cultural Resources Assessment, Appendix I.

XIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-SMA (OLD)	750	$6777.00
TOTALS BY JURISDICTION BY FIRE		
BIA-OLD	750	$6777.00
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA-OLD-SMA	750	$6777.00
GRAND TOTALS	750	$6777.00

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**INAJA CEMETERY EROSION CONTROL**	**JURSIDICTIONS:**	**BIA-INA**
PART E: LINE ITEM:	**C-2, Inaja Cemetery Protection**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3 Cultural Resources**	**SPECIFICATION TYPE:**	**ES**

XIV. WORK TO BE DONE

A. General Description:

The Inaja Cemetery is situated adjacent to a seasonal drainage. Erosion across the southeast corner of the cemetery indicates that high water events have the potential to impact the cemetery. Placement of sand bags and construction of a rolling crossing on the road below the cemetery should protect it from erosion. It is anticipated that re-vegetation will occur naturally, and therefore no watershed protection measures are proposed for the area above the cemetery.

B. Location (Suitable) Sites:

Inaja Reservation Cemetery, San Diego County. GPS Coordinates: WGS 84 Zone 11 / N 3651980 / E 534063

C. Design/Construction Specifications:

1. Sand bags will be placed along the east side of the cemetery beginning at the fourth metal fence post from the top of thecemetery and extending for 75 feet south along the fence, the bags should then wrap around the southeast corner of the fence for 20 feet to deflect water back into the drainage. Sand should be unloaded on a bare mineral soil area on the west side of the cemetery. The bags should be laid two wide and three tall to be effective.

2. Two rolling crossings will be constructed across the two small drainages which cross the road below the cemetery. The crossings should be constructed so that a vehicle can easily cross the drainage and should be at least ten feet across.

D. Purpose of Treatment Specification:

To prevent erosion of the Inaja Cemetery from high water events in the drainage adjacent to the cemetery. The sand bags will be serve as a barricade along the drainage located on the east side of the cemetery. Water overflowing the existing confines of the drainage will be diverted back into the drainage before it can reach the cemetery. The rolling crossings will allow more efficient removal of water from the vicinity of the cemetery. Water currently stacks up along the side of the road before overflowing into the drainage below.

E. Treatment Effectiveness Monitoring

The BIA Southern California Agency Natural Resource Officer will monitor the cemetery for treatment effectiveness.

XV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Natural Resources Officer GS-12/2 @ $24.68/hour X 16 hours x 1 FY	$395.00
TOTAL PERSONNEL SERVICE COST	$395.00
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Dozer and Operator @ $1000/Day X 1 Day X 1 FY	$1000.00
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	$1000.00

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
570 sand bags @ $0.15/bag X 1 FY Sand @ $13.00/yard x 21 cubic yards X 1 FY	$ 86.00 $273.00
TOTAL MATERIAL AND SUPPLY COST	$359.00
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
Natural Resources Officer @ $.036/mile X 2 Round Trips X 1 FY	$144.00
TOTAL TRAVEL COST	$144.00
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
12 Person Crew @ $3000./day X 2 Days X 1 FY	$6000.00
TOTAL CONTRACT COST	$6000.00

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	Feet	$13.86	570	$7898.00	ESR	C, A
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	C
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

XVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Cultural Resource Assessment, Appendix I

XVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-INA (CEDAR)	570 Sand Bags	$7898.00
TOTALS BY JURISDICTION BY FIRE		
BIA-CEDAR	570 Sand Bags	$7898.00
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	570 Sand Bags	$7898.00
GRAND TOTALS	570 Sand Bags	$7898.00

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**T&E SPECIES MONITORING**	**JURSIDICTIONS:**	**FWS BLM**
PART E: LINE ITEM:	**WL-1, T&E Species Monitoring**	**FISCAL YEAR:**	**FY04**
ESR REFERENCE #:	**6.3.8 Threatened & Endangered Species**	**SPECIFICATION TYPE:**	**ES**

XVIII. WORK TO BE DONE

A. General Description:

Identify fire caused mortality of Quino checkerspot butterflies and subsequent mortality of butterflies that could result in loss of population resilience in critical butterfly occurrences**.**

B. Location (Suitable) Sites:

All Bureau of Land Management (BLM) and U. S. Fish and Wildlife Service (FWS) managed lands in the Southwestern San Diego Recovery Unit within the Otay Fire perimeter that are known to have been recently occupied by Quino checkerspot butterfly.

C. Design/Construction Specifications:

Surveyors will determine the beginning of the flight season by surveying unaffected populations. Once the adult flight season begins, surveys will occur at least once per week for 5 weeks. Surveys will occur within 6 known occurrences and suitable habitat within 200 meters of mapped occurrence complexes (map attached). Survey will cover all mapped butterfly locations, known host plant populations, and hilltops within suitable sites. Surveys will occur during a season within 1 standard deviation of average annual precipitation for the Otay Area (precip falling in the winter before the adults emerge). All survey work will follow the standard survey protocol (attached). If no Quino are detected within suitable, known sites, butterfly ranching will be recommended to help reestablish population resilience.

D. Purpose of Treatment Specification:

The Otay Fire affected 53 % of all Quino occurrences within the South West San Diego Recovery Unit. 2.5 of the 3 core occurrence complex occurrence locations were within the high severity area burned by the fire. These occurrences represent the majority of actual butterflies found in the population (ie occurrences outside the fire area have very few butterflies). It is possible that the butterflies (diapause phase) were killed by the fire. Because this is a federally listed Endangered species, it is critical to determine mortality and possible loss of population resiliency. If decreased butterfly numbers reduce population resiliency and the population is not expected to recover without assistance, the next step would be to recommend captive propagation and reintroduction to prevent loss of the species. The Quino checkerspot butterfly is endemic to San Diego and Riverside Counties, and Baja California Norte, Mexioco. Due to drought and habitat loss, populations are severely reduced in abundance and distribution. The populations and habitat affected by the fire represent a significant part of the remaining distribution. More information can be found in the BAER Wildlife Assessment and the Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) (FWS 2003).

E. Treatment Effectiveness Monitoring

Monitoring of the Quino checkerspot butterfly and associated habitat will be conducted in accordance with established protocols (attached). If the number of butterflies is low or the butterfly is found to be extirpated from known habitats within the fire area, a supplemental funding request will be initiated to conduct captive propogation and ranching of the butterflies on the natural habitat which is expected to recover within the next few years (primary host plants are owls clover and plantago).

XIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
GS-11 (FWS Entomologist) @ $30/hour X 60 hours X 1 FY	**$1800.00**
TOTAL PERSONNEL SERVICE COST	**$1800.00**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
None	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
None	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
None	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Survey 1 location per day X 6 sites X 5 visits per site = 30 days @ 8 hours per day (includes OH) x $85 per hour (high cost reflects need for contractor to have high skill level and be permitted by FWS to conduct survey) = $20,400	**$20,400**
TOTAL CONTRACT COST	**$20,400**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**FY**	**$22,200**	**1**	**$22,200**	**ESR**	**P C**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

XX. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Wildlife BAER Assessment, Emergency Consultation package, attached survey protocol and survey location map (BAER Map Volume**, 8d**).

XXI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BLM-Otay	**5 survey sites**	**$18,500**
FWS-Otay	**1 survey site**	**$3,700**
TOTALS BY JURISDICTION BY FIRE		
BLM-Otay	**5 survey sites**	**$18,500**
FWS-Otay	**1 survey site**	**$3,700**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BLM	**5 sites**	**$18,500**
FWS	**1 site**	**$3,700**
GRAND TOTALS		**$22,200**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**DOZERLINE REPAIR**	**JURSIDICTIONS:**	**BIA-SYC (Otay); BIA-LJO (Paradise); BLM, BIA-SYS (Cedar), BLM (Old)**
PART E: LINE ITEM:	**S-1, Dozerline Repair**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.2.13 Wildland Fire Suppression Rehabilitation**	**SPECIFICATION TYPE:**	**FS**

XXII. WORK TO BE DONE

A. General Description:

Repair of suppression constructed "dozerline" is necessary to avoid excessive soil erosion and restore natural landscape surface water flows. Repair will also serve to restrict undesired access by 4 wheeled drive and "all terrain vehicles (ATV), provide for re-establishment of pre-incident road closures where affected by suppression access needs.

B. Location (Suitable) Sites:

Reference Suppression Impacts Map, Volume 5a, 5b, 5c and 5d, for location of known dozerline. Additional lines should be repaired as they are discovered in the field. All newly discovered lines should be mapped.

C. Design/Construction Specifications:

1. Return Soil Side Cast Berms, and recover "fill" materials and replace in "cut" banks along dozerline blending excavator disturbed areas to fit the natural contours. Accomplishment of this specification is best achieved with use of an excavator with a 2 to 3 cubic yard bucket with an opposable thumb, with capabilities of working on steep sloped (50 to 60%) and capable of having a 30 to 35ft. reach.
2. Compacted soils from intensively used areas from suppression equipment should be scarified.
3. In some locations identified for fuel breaks, slash will be mechanically treated (timber harvest, brush hog), and some areas slash will be partially pulled back leaving an area wide enough for access.
4. Waterbar spacing should be installed according to the following standards depending upon slope and soil susceptibility to erosion with waterbar spacing decreasing on steeper slopes. Generally….
   a) Waterbars are to be built on slopes greater than 5%.
   b) Waterbars should be skewed horizontally from the fall line of the slope (not the dozer) approximately 15 to 20 degrees from horizontal and drained away from the fire burned area if possible.
   c) Utilize natural rolls and dips whenever possible
   d) Scatter branches, wood, rock, sod, or other materials to naturalize the fire line and further retard mineral soil movement (best done with an excavator or heavy duty backhoe not hand crew) Scattered materials should be randomly placed along the dozerline. In grassy areas, replace soil and sod, waterbar as necessary and scatter rocks or limbs to naturalize the dozerline location.
   e) Hand crews may be used to augment scattering of wood debris/slash to naturalize the dozer and further retard soil erosion, striving to achieve a minimum of 65% surface cover.
   f) Hand crews may be used to construct waterbars on slopes greater than 50% (with little to no rock) or in areas too hazardous for safe excavator use.
   g) Remove all trash and equipment associated with dozer equipment maintenance.
   h) Fill materials will be cleaned or removed from established drainages and live watercourses (best done with an excavator).
5. Approximately 55 acres of dozer lines require reseeding on DOI managed lands. Reseeding should be accomplished by ATV mounted or hand seed spreaders. In cases where ATV's are used, a section of chain link fence should be dragged behind to help incorporate the seed. The native grass and shrub seed mix to be used, quantity of seed required, and possible suppliers are as follows:

   Dwarf goldfields (lasthenia californica) 30% of mix (0.08/lbs/ac), Dwarf lupine (Lupinus bicolor) 10% of mix (1.09/lbs/ac), Purple needlegrass (Nassella pulchra) 10% of mix (0.99/lbs/ac), Flat-topped buckwheat (Eriognum fasciculatum) 15% of mix (0.22/lbs/ac), Deer weed (Lotus scoparius) 20% of mix (1.28/lbs/ac), California sagebrush (Artemisia californica) 10% of mix (0.02/lbs/ac), and White sage (Salvia apiana) 5% of mix (0.18/lbs/ac)

   An additional 10.5 pounds of spring barley (Baroness, Zena or equal variety) should be added to the mix per acre. It is recommended that electric seed spreaders be purchased to mount on the ATV's for the reseeding effort.

D. Purpose of Treatment Specification:
To prevent surface and gully erosion on lands disturbed by dozerline. Waterbars are intended to channel water off dozerline and prevent gully erosion.
E. Treatment Effectiveness Monitoring
Visually inspect line after rain events and correct any erosion problems.

XXIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Cost charged to fire suppression account – not tracked in this plan.	F
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	miles	F	113.5	F	F	C
2005						
2006						
TOTAL	miles	F	113.5	F	F	C

FUNDING SOURCES

F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	c

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XXIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan

See Operations Assessment – Appendix I & Map Volume – Suppression Impacts 5a, 5b, 5c and 5d

XXV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-SYC (Otay)	.1	F
BIA-LJO (Paradise)	7.7	F
BIA-SYS (Cedar)	.2	F
BLM (Cedar)	.1	F
BLM-(Old)	1.4	F
TOTALS BY JURISDICTION BY FIRE		F
BIA-Cedar	.2	F
BIA-Otay	.1	F
BIA-Paradise	7.7	F
BLM-Cedar	.1	F
BLM-Old	1.4	F
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		F
BIA	8	F
BLM	1.5	F
PRIVATE, FEDERAL (other), STATE, LOCAL, etc.	117.1	F
GRAND TOTALS	126.6	F

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**ICP/HELIBASE REPAIR**	**JURSIDICTIONS:**	**BIA-VIE**
PART E: LINE ITEM:	**S-2, ICP/Helibase Repair**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.2.13 Wildland Fire Suppression Repair**	**SPECIFICATION TYPE:**	**FS**

XXVI. WORK TO BE DONE

A. General Description:

Repair of the Incident Command Post Located at the Tipai Park on the Viejas Indian Reservation is necessary to avoid excessive soil erosion and restore natural landscape surface water flows. Repair is necessary to restore visual values as well as functionality to the park and restore it to pre-fire condition.

B. Location (Suitable) Sites:

See Map Volume, Suppression Impacts Map 5a for the Viejas Indian reservation.

C. Design/Construction Specifications:

6. **Fences-** Replace/Repair the following fence segments: 40' section of plastic and barbed wire fence along Viejas Grande Road in front of the parking lot and a 40' section at the far north end of the fence line on the same road, two 10' sections and one 40' section of plastic and barbed wire along the north fence line, one 6' and one 50' section of fence along the east fence line, two 30' sections of fence along Browns Road, one on the south side of the road and one on the north side at the entrance to the service road on the far east side of the camp. Three plastic fence posts were damaged during removal and need to be replaced.
7. **Buildings-** The large brown building and the doublewide mobile home were both utilized during the incident, and while no damage was noted, the carpets in each of the two buildings should be cleaned.
8. **Grounds-** One break to a sprinkler pipe near the covered picnic area was capped. The waterline should be monitored for 30 days for possible defects that are not visible at this time. The Ball fields should be reseeded after all the tents have been removed. The grassy area south of the ball field should also be reseeded. An area 20' X 70' should have the sod replaced because of the overuse associated with the shower unit located there.
9. **Seeding-** All seeding areas listed above should be seeded. See Spec S-1 Dozer Line Repair, seed mix, rate, and application method.
5. **Misc**- 2-3 yards of wood chips were laid along high traffic areas in the covered picnic area and should be removed. Wood chips can be placed in a pile next to the sand pile for later use. The access road to the Heli Base where the pavement meets the dirt road will require grading.

D. Purpose of Treatment Specification:

To prevent erosion on lands disturbed by the ICP/Helibase, and to restore visual value and functionality to the park area.

E. Treatment Effectiveness Monitoring

None

XXVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	Job	F	1		F	
2005						
2006						
TOTAL	Job	F	1		F	

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XXVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operations Assessment, Appendix I and Map Volume - Fire Suppression Impacts Map 5a

XXIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-VIE(Cedar)		
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar		
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA		
BLM		
FWS		
GRAND TOTALS		

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**HAND LINE REPAIR**	**JURSIDICTIONS:**	**BIA-LJO**
PART E: LINE ITEM:	**S-3, Hand line Repair**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.2.13 Wildland Fire Suppression Repair**	**SPECIFICATION TYPE:**	**FS**

XXX. WORK TO BE DONE

A. General Description:

Repair of suppression constructed "handlines" is necessary to avoid erosion that would result in gullies and to restore natural surface flows.

B. Location (Suitable) Sites:

See Map Volume - Fire Suppression Impacts Map 5b for location of known handline. Additional handline should be repaired as they are discovered in the field. All newly discovered line should be mapped.

C. Design/Construction Specifications:

1. Use hand tools only – chainsaw included.
2. Trenching (if any) should be filled in and the handline restored to blend with the undisturbed soil contours. Berms, topsoil, and organic matter should be pulled back onto the handline. Green trees/branches, dead limbs, and cut downed logs are to be scattered onto the handline to obliterate evidence of the lines as much as practical.
3. Waterbar spacing should be every 50 feet depending upon slope and soil susceptibility to erosion with waterbar spacing decreasing on steeper slopes. Generally….

SLOPE	SPACING
0-5%	400 ft.
6-10%	300 ft.
11-20%	200 ft.
21-40%	100 ft.
41-60%	50 ft. or less

a) Waterbars should be skewed horizontally from the fall line of the slope (not the handline) approximately 15 to 20 degrees from horizontal and drained away from the burned areas if possible.

b) Utilize natural rolls and dips whenever possible.

c) Scatter branches, wood, rock, sod, pine needles, or other material to naturalize the fire line and further retard mineral soil movement. Scattered material should be randomly placed along the handline. Strive for 65% to 85% ground cover on areas treated with scattered materials to prevent mineral soils and channeling of the handline. In grassy areas, replace soil and sod, waterbar as necessary and scatter rocks or limbs to naturalize the handline location.

d) Remove all trash, equipment, and flagging.

D. Purpose of Treatment Specification:

To prevent surface and gully erosion along the length of or in areas adjoining handlines. Waterbars are to be constructed on the handline to restore natural surface run-off patterns and to provide adequate drainage on the handline. Waterbars should not prevent the natural drainage of the adjacent landscape and should be constructed nearly perpendicular to the contour of the slope. Waterbars are only intended to stabilize disturbance. Waterbars should gradually disappear, blending with the adjacent terrain within 2 to 4 year period.

E. Treatment Effectiveness Monitoring

Visually inspect hand line subsequent to rain events and correct any drainage problems identified.

XXXI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Handline rehabilitated by fire crews assigned to the fire – cost not tracked in ESR plan	F
TOTAL PERSONNEL SERVICE COST	F
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	miles		N/A	F	F	F
2005						
2006						
TOTAL	miles		N/A	F	F	F

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	F

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XXXII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operations Assessment – Appendix I and Map Volume – Fire Suppression Impacts Map 5b

XXXIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-LJO (Paradise)	7.7	F
TOTALS BY JURISDICTION BY FIRE		
BIA-Paradise	7.7	F
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	7.7	**F**
BLM		
FWS		
GRAND TOTALS	7.7	F

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**T&E HABITAT IRRIGATION SYSTEM REPAIR**	**JURSIDICTIONS:**	**BIA-RIN**
PART E: LINE ITEM:	**S-4, T&E Habitat Irrigation System Repair**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.2.13 Wildland Fire Suppression Repair**	**SPECIFICATION TYPE:**	**FS**

XXXIV. WORK TO BE DONE

A. General Description:

During the initial attack phase of the Paradise Fire, dozer line was constructed near the Rincon Casino, destroyed approximately 200 feet of irrigation hose and uprooted six trees. Repair of the irrigation system and replanting of the six trees is necessary in order to remain in compliance with an existing mitigation plan, subject to the Endangered Species Act of 1973.

B. Location (Suitable) Sites:

The site is within the San Luis Rey River riparian zone, south of the Rincon Indian Reservation, San Diego County, CA, in critical habitat for the arroyo toad (Bufo californicus). See Map Volume – Fire Suppression Impacts Map 5b.

C. Design/Construction Specifications:

1. Replace approximately 500 feet of ½ inch plastic irrigation hose, valves, irrigation heads, and other apparatus, necessary to furnish water to the mitigation project.
2. Purchase 3 native coast live oaks and 3 native sycamores to replace in-kind the trees destroyed by suppression forces.
3. Transport the trees to the site and plant them in locations identified in the arroyo toad mitigation plan. Provide necessary soil amendments and stake the trees. The trees should be insured for one year.

D. Purpose of Treatment Specification:

The survival of the trees is a requirement identified within the Conservation Recommendation of the U.S Fish & Wildlife Service, Biological Opinion for the Rincon Gaming Facility.

E. Treatment Effectiveness Monitoring

The trees will be inspected within a year of planting to insure survival, and any mortality will be replaced with in-kind species.

XXXV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Native sycamore trees, 15 gallon container size @ $300/ ea, installed & insured x 3 = $900	$900
Native coast live oak trees, 15 gallon container size @ $300/ea, installed & insured x 3 = $900	$900
Irrigation hose (500 ft) & apparatus @ $400	$400
TOTAL MATERIAL AND SUPPLY COST	$2,200

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Installation of irrigation system	$2000
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	job	$4,200	1	$4,200	F	C
2005						
2006						
TOTAL	job	$4,200	1	$4,200	F	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XXXVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operations Assessment – Appendix I and Map Volume – Fire Suppression Impacts Map 5b

XXXVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-RIN (Paradise)	1	$4,200
TOTALS BY JURISDICTION BY FIRE		
BIA-Paradise	1	$4,200
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	1	$4,200
BLM		
FWS		
GRAND TOTALS	1	$4,200

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**ROAD SAFETY: Signs, Guardrail & Mirrors**	**JURSIDICTIONS:**	**BLM, BIA-SPA**
PART E: LINE ITEM:	**S-5, Road Safety**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.10 Health & Safety**	**SPECIFICATION TYPE:**	**ES**

XXXVIII. WORK TO BE DONE

A. General Description:

Provide replacement of fiberglass (carsonite or similar) reflective markers and safety mirrors on the Otay Mountain Trail, Minneswana Truck Trail, and White Cross Road. Replace wooden support posts along 2,000 feet of guardrail on Canal and South Canal roads on the San Pasqual Indian Reservation. Replace 20 road safety signs burned along Canal and South Canal roads on the San Pasqual Indian Reservation.

B. Location (Suitable) Sites:

Carsonite reflectors and mirrors need replaced on the outside edge of Otay Mountain Trail, Minneswana Truck Trail, and White Cross Road roadways. Guardrail needs repaired along the Canal and South Canal roads on the San Pasqual Indian Reservation. Install 20 road safety signs burned at various locations on the San Pasqual Indian Reservation. See Map Volume Fire Suppression Impacts Map – 5b and 5c.

C. Design/Construction Specifications:

1. White fiberglass (carsonite or similar) post with standard reflective decals or tape. The mirrors must be round metal or glass a minimum of 3 ft. in diameter and mounted on a 10 ft. metal post.

a) Carsonite reflector spacing:

Spacing	Alignment
300-600 ft	Straight Away
50-100 ft	Curves

b) Mirrors will be placed on all blind curves. Total curves 10.

2. Replace wooden posts supporting guardrail along 2,000 feet of roads. The 6x8x6' posts, post blocks, bolts and nuts need to be bolted to the existing guardrail. The metal guardrail appears to be in sound condition, but may have suffered heat stress in a few locations, and will need replacement with 12ft.6" guardrail beam.

3. Replace 20 road safety signs including post.

D. Purpose of Treatment Specification:

Reflective markers and mirrors are needed on curves to mark edge of road and see oncoming traffic on this single lane mountain road. Guardrails are needed to prevent vehicles from travelling down steep slopes. Safety road signs are needed to prevent accidents to vehicles and pedestrians.

E. Treatment Effectiveness Monitoring

Visually monitor while driving the roads.

XXXIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Carsonite Post, 6 ft $20 x 245	$4,900
Reflective Decal, $5 x 245	$1,225
Mirrors & pole, $200 x 10	$2,000
Guardrail beams, 12ft. 6'' @ $59.75/ea x 10 = $598	$598
Guardrail posts, 6x8x6' @ $34/ea x 340 = $11,560	$11,560
Guardrail post blocks, 6x8x14" @ $11.50/ea x340 = $3910	$3,910
Guardrail bolts, 18" @ $3.50/ea x 340 = $1190	$1,190
Guardrail splice bolts & nuts @ $400	$400
TOTAL MATERIAL AND SUPPLY COST	$25,783
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
Otay Mirror & Carsonite project, mileage @ $50, and lodging 6 nights @$158= $948	$998
TOTAL TRAVEL COST	$998
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Traffic signs @ $50 each including purchase and installation X 20= $1020	$1020
Guardrail installation @ $150/linear foot x 2000 = $300,000	$300,000
TOTAL CONTRACT COST	$301,020

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	feet	$159	2000	$317,658	ESR	C
	Signs & mirrors	$10,143	1	$10,143	ESR	C
2005						
2006						
TOTAL		$10,302		$327,801	ESR	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XL. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operations Assessment, Appendix I and Map Volume - Fire Suppression Impacts Map 5b and 5c.

XLI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BLM-Otay	1	$9,123
BIA-SPA	2000 linear feet (guardrail) & 20 traffic signs	$318,678
TOTALS BY JURISDICTION BY FIRE		
BLM-Otay		$9,123
BIA-Paradise		$318,678
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA		$318,678
BLM		$9,123
FWS		
GRAND TOTALS		$327,801

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**BRIDGE INSPECTION**	**JURSIDICTIONS:**	**BIA-LJO**
PART E: LINE ITEM:	**S-6, Bridge Inspection**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.10 Health & Safety**	**SPECIFICATION TYPE:**	**FS**

XLII. WORK TO BE DONE

A. General Description:

Conduct a professional engineering inspection of the following: 1) the decking on the bridge was damage by dozer traffic, 2) there is a noticeable crack to the bridge abutment on the north side, 3) the entire structure needs to be checked for structural integrity, and 4) prepare a final report and, if needed, provide a design, specifications, and cost estimate for repair or replacement.

The 20-foot long bridge sustained damaged from several dozers using the crossing to access the perimeter of the fire.

B. Location (Suitable) Sites:

See Map Volume – Fire Suppression Impacts Map 5b. The bridge is located on the La Jolla Indian Reservation at a crossing of the San Luis Rey River, adjacent to the campground.

C. Design/Construction Specifications:

1. The bridge should be inspected by a certified civil engineer, with experience in bridge construction and maintenance.
2. The survey should determine the structural integrity of the bridge decking, abutments, support beams, and other features that may compromise safety, should they fail.
3. The Engineer's report should contain a thorough summary of their findings.
4. Make recommendations, if needed, to mitigate safety issues, and provide design specification with cost estimates for repair.

D. Purpose of Treatment Specification:

To determine if the La Jolla bridge crossing of the San Luis Rey River, near the campground, is safe for vehicular traffic.

E. Treatment Effectiveness Monitoring

N/A

XLIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Civil Engineering, 6 hours @ $300, which includes travel and report preparation	$1,800
TOTAL PERSONNEL SERVICE COST	$1,800
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	job	$1,800	1	$1,800	F	C
2005						
2006						
TOTAL	job	$1,800	1	$1,800	F	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	P
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XLIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operations Assessment, Appendix I and Map Volume - Fire Suppression Impacts Map 5b

XLV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-LJO (Paradise)	1	$1,800
TOTALS BY JURISDICTION BY FIRE		
BIA - Paradise	1	$1,800
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	1	$1,800
BLM		
FWS		
GRAND TOTALS	1	$1,800

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**CLEAR CHANNELS OF FLOATABLE DEBRIS AND VEGETATION**	**JURSIDICTIONS:**	**BIA-BAR, BIA-VIE BIA-RIN, BIA-INA**
PART E: LINE ITEM:	**W-1, Channel Clearing**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

XLVI. WORK TO BE DONE

A. General Description:

Remove floatable debris and vegetation from stream channels. Crews and heavy equipment will be used to remove course debris to maximize channel capacity and eliminate obstructions that could block culverts or divert flows out of channels. Debris includes downed trees, branches, household trash, etc. Cut and remove brush/trees at ground level (up to 6" in diameter).

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a (Sites 31,33,35, 39, 80 and 103), and 13b (Sites 84 and 85), Map Volume and Appendix IV Watershed Treatment Table for specific UTM coordinance.

C. Design/Construction Specifications:

1. Remove floatable debris from stream channels and haul out of the adjoining flood plain to prevent it from being mobilized in flood events.
2. Cut and remove brush/trees at ground level up to 6" in diameter within active channel.
3. Household debris and other trash should be recycled or disposed of appropriately at landfills or transfer stations.

D. Purpose of Treatment Specification:

To maximize flood channel capacity and eliminate obstructions that could block culverts, cause overland flows, damage bridges, roads or other structures.

E. Treatment Effectiveness Monitoring

Inspect stream channels after flood events to remove newly deposited floatable debris.

XLVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	**COST/ITEM**
1 Type II Crew @ $3,500/day x 9 days = $31,500	**$31,500**
TOTAL PERSONNEL SERVICE COST	**$31,500**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	**COST/ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
10 Dumpsters @ $400 each = $4,000	**$4,000**
Front-end loader w/operator @ $600/day X 9 days = $5,400	**$5,400**
Excavator w/operator @ $1,400/day X 9 days = $12,600	**$12,600**
Transport w/operator @ $450/day X 9 days = $4,050	**$4,050**
TOTAL CONTRACT COST	**$26,050**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Feet**	**$4.15**	**13,875**	**$57,550**	**ES**	**P,C**
2005						
2006						
TOTAL					**ES**	**P,C**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**P,C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

XLVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13a, Map Volume, and Watershed Treatment Table Appendix IV.

XLIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**10,400 ft.**	**$43,107**
BIA-VIE (Cedar)	**3,200 ft.**	**$13,299**
BIA-INA (Cedar)	**25 ft.**	**$104**
BIA-RIN (Paradise)	**250 ft.**	**$1,040**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**13,625 ft.**	**$56,510**
BIA-Paradise	**250 ft.**	**$1,040**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**13,875 ft.**	**$57,550**
GRAND TOTALS	**13,875 ft.**	**$57,550**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**CULVERT CLEANING**	**JURSIDICTIONS:**	**BIA-BAR, BIA-VIE, BIA-INA, BIA-CGR, BIA-SPA, BIA-LJO, BIA-RIN, BIA-SMA**
PART E: LINE ITEM:	**W-2, Culvert Cleaning**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.21.Watershed & Property Protection Strategy**	**SPECIFICATION TYPE:**	**ES**

L. WORK TO BE DONE

A. General Description:

Culverts that are in areas at risk to flooding and/or debris flows should be cleaned to ensure maximum flow capacity. Subsequent to flood events culverts should be inspected and if necessary re-cleaned.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a (Sites 29,31,35, 39,63,67,73, and 74), 13b (Site 112), and 13d,Map Volume and Appendix IV Treatment Table for specific UTM coordinance.

C. Design/Construction Specifications:

1. Shovel and flush debris from culverts and place outside of channel where it cannot re-enter stream channels.
2. Use backhoe and dump truck to remove debris and fill from channel and around culvert. Use water tender and/or fire engine to flush debris out of culverts.

D. Purpose of Treatment Specification:

To maximize culvert and channel capacity to handle flood flows and protect road beds

E. Treatment Effectiveness Monitoring

Visually inspect each culvert in flood prone areas subsequent to rain events and clean those blocked

LI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	**COST/ITEM**
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	**COST/ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Operator and Backhoe @ $65 / hour X 60 hours X 1 backhoes / flood event X 4 flood events	**$15,600**
Operator and Dump Truck @ $65 / hour X 60 / hours 1 dump trucks / flood event X 4 flood events	**$15,600**
Operator and Engine @ $85 / hour X 80 / hours 1 engines / flood event X 4 flood events	**$27,200**
TOTAL CONTRACT COST	**$58,400**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Culvert**	**$834**	**70**	**$58,400**	**ES**	**C**
2005						
2006						
TOTAL	**Culvert**	**$834**	**70**	**$58,400**	**ES**	**C**

FUNDING SOURCES	**SPECIFICATION TYPE**	**METHOD OF COMPLETION**
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

LII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Maps 13a, 13b and 13d, Map Volume, and Watershed Treatment Table Appendix IV.

LIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**10**	**$8,340**
BIA-VIE(Cedar)	**10**	**$8,340**
BIA-INA(Cedar)	**5**	**$4,180**
BIA-CGR(Cedar)	**5**	**$4,180**
BIA-SPA(Paradise)	**10**	**$8,340**
BIA-LJO(Paradise)	**10**	**$8,340**
BIA-RIN(Paradise)	**10**	**$8,340**
BIA-SMA(Old)	**10**	**$8,340**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**30**	**$25,030**
BIA-Paradise	**30**	**$25,030**
BIA-Old	**10**	**$8,340**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**70**	**$58,400**
GRAND TOTALS	**70**	**$58,400**

!Unexpected End of Formula

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**DEBRIS BASIN DESIGN**	**JURSIDICTIONS:**	**BIA-SMA**
PART E: LINE ITEM:	**W-3 Debris Basin Design**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.21.2 Watershed & Property Protection Strategy**	**SPECIFICATION TYPE:**	**ES**

LIV. WORK TO BE DONE

A. General Description:

Complete an engineer assessment for installation of eight debris basins on the San Manuel Indian reservation to capture sediment from anticipated mud and debris flows. The assessment will include debris basin designs and the engineering firm will provide oversight for debris basin construction.

B. Location (Suitable) Sites:

See San Manuel Indian reservation Watershed Treatment Map 13d; Sites 2,3,4,5,7,18,21and 38 Map Volume and Appendix IV.

C. Design/Construction Specifications:

1. Evaluate locations for construction of debris basins.
2. Complete construction design including specifications, cost estimates, diagrams and engineering drawing. Provide designs to the Bureau of Indian Affairs for implementation.
3. Provide engineering over-site of project construction.

D. Purpose of Treatment Specification:

Infrastructure is positioned directly in the flow path of potential mud and debris flows. Debris basins will capture of sediment and debris reducing risks to downstream life and property.

E. Treatment Effectiveness Monitoring

Inspect debris basins after major flood events and remove debris if the basin has filled.

LV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	**COST/ITEM**
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	**COST/ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Civil engineer @ $125/hr x 80 hours x 1 = $10,000	**$10,000**
Civil engineer technician @ $85/hr x 80 hours x 1 = $6,800	**$6,800**
TOTAL CONTRACT COST	**$16,800**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Assessment**	**$16,800**	**1**	**$16,800**	**ES**	**C**
2005						
2006						
TOTAL					**ES**	**C**

FUNDING SOURCES	**SPECIFICATION TYPE**	**METHOD OF COMPLETION**
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

LVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, San Manuel Watershed Treatment Map 13d, Map Volume and Watershed Treatment Table, Appendix IV.

LVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-SMA(Old)	**1**	**$16,800**
TOTALS BY JURISDICTION BY FIRE		
BIA-SMA	**1**	**$16,800**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**1**	**$16,800**
GRAND TOTALS		**$16,800**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**HYDROMULCH**	**JURSIDICTIONS:**	**BIA-BAR, BIA-CGR, BIA-SMA, BIA-RIN**
PART E: LINE ITEM:	**#16, W-4, Hydromulch**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.21.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

LVIII. WORK TO BE DONE

A. General Description:

Hydromulch is applied where the pre-burn ground cover was consumed by the fire and the expected overland runoff would threaten high values at risk. First year effectiveness includes stabilizing ashes onsite, preventing loss of topsoil, improving infiltration rates and replacing organic matter consumed by the fire. All of these are usually associated with flood and debris flow source areas, and therefore mulching has a secondary benefit of controlling flood peaks and reducing the probability of debris flows.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a, 13b (Sites 32,33, 107 and 186) and 13d (Sites 30, 31, 32 and 41); Map Volume and Watershed Treatment Table for Appendix V for specific UTM coordinance.

C. Design/Construction Specifications:

1. Site Selection: Suitable sites are designated on the treatment map.
2. Hydromulching will provide effective groundcover and needs to be completed before storms produce extensive soil erosion and overland flow. The first storms after the fire generally wash ash from hillslopes and subsequent storms initiate surface erosion and overland flow. The wood and paper mulches in the hydromulch mixture will protect the hill slope from erosion, and provide a favorable environment for native seed and sprouting vegetation to germinate by maintaining adequate soil temperature and moisture.
3. Hydromulch Mixture: For Site 32 on Map 13d (San Manuel Indian Reservation) The contractor will utilize a hydromulch mixture consisting of no less than 2500 gallons of water/acre, 800/lbs of mulch/per acre, 450 lbs of organic binder/acre. The mulch will be 60% paper (480 lbs./acre) and 40% wood (320 lbs./acre). For all other sites the will utilize a hydromulch mixture consisting of no less than 2000 gallons of water/acre, 500/lbs of mulch/per acre, 300 lbs of organic binder for all sites will be SOILSET.
4. Application of Hydromulch: The contractor is responsible for determining the best method for application of the hydromulch and for providing all materials, supplies, equipment, personnel, loading and transportation necessary to apply the hydromulch.
5. Completion Date: Work must be completed by November 30, 2003

D. Purpose of Treatment Specification:

The purpose of hydromulch is to replace the natural ground cover density that was consumed by the fire. Hydromulch can effectively control overland runoff due to bare soil. By controlling the overland runoff, the top soil is also protected. Hydromulch can also: 1) break the impact of raindrops and prevent soil compaction; 2) maintain a favorable moisture regime for native seeds and sprouting vegetation; 3) insulate the topsoil and provide a more favorable temperature range for new plants; 4) provide a growing medium for soil biological activity including soil flora, fauna, and fungal complex; and 5) effectively control sediment loss from a burned area. By treating the source of floodwaters after a burn, the immediate downslope area can also be effectively protected. Rills and gullies that originate in medium and high watershed response areas can migrate downslope from the place of origin and scour the slope for several hundred feet. Therefore mulching can protect much larger, downslope areas from the cumulative effect of hillslope runoff.

E. Treatment Effectiveness Monitoring

Visually inspect area treated and repair as needed.

LIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Contracted hydromulch mixture, supplies, equipment, personnel, loading and transportation Aerial @ $3,000 / Acre X 240 acres = $720,000 Ground application @$1,500/Acre X 293.5 = $440,250	**$1,160,250**
TOTAL CONTRACT COST	**$1,160,250**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Acre**	**$2,175**	**533.5**	**$1,160,362**	**ES**	**C**
2005						
2006						
TOTAL					**ES**	**C**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

LX. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment, Appendix I, Watershed Treatment maps 13a, 13b, and 13d, and Watershed Treatment Table Appendix V.

LXI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**286 (52 private)**	**$622,050**
BIA-CGR(Cedar)	**200**	**$435,000**
BIA-SMA(Old)	**42.5**	**$ 92,437**
BIA-RIN (Paradise)	**5**	**$10,875**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**486 (52 private)**	**1,057,050**
BIA-Old	**42.5**	**$ 92.437**
BIA-Paradise	**5**	**$10,875**

GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA		
GRAND TOTALS	533.5	$1,160,362

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**RESIDENCE SEDIMENT AND DEBRIS CONTROL**	**JURSIDICTIONS:**	**BIA-BAR, BIA-SPA, BIA-RIN, BIA-SMA**
PART E: LINE ITEM:	**W-5, Residence Sediment And Debris Control**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.21.Watershed & Property Protection Strategy**	**SPECIFICATION TYPE:**	**ES**

LXII. WORK TO BE DONE

A. General Description:

Overland flow, rills, and gullies from burned hill slopes above residence structures and lots will entrain burned debris, ash and soil and deliver this material to adjacent ephemeral, intermittent, and perennial stream channels. Chemical constituents in the debris and soil could impair water quality. Also, floatable material on the residence lots could block downstream culverts or create debris jam receptors at bridges.

B. Location (Suitable) Sites:

Burned structures that are adjacent to ephemeral, intermittent, and perennial stream channels on the Barona, Rincon, San Manuel and San Pasqual Indian reservations.

C. Design/Construction Specifications:

Control off-site movement of debris and sediment by installing perimeter sediment control devices such as straw bales, straw wattles, or silt fences.

1. The length and type of control device will depend upon site conditions (slope gradient, size of debris, and discharge velocities).
2. Straw bales and wattles need to be certified weed free.
3. Control devices will be placed in such a way as to contain the sediment and debris and not to allow them to pass through or around the device.
4. The primary placement of the control device is to prevent sediment and debris from entering stream channels.

D. Purpose of Treatment Specification:

Prevent off-site sediment discharge from burned residence, burned debris, ash, and soil.

E. Treatment Effectiveness Monitoring

Inspect installed perimeter sediment and debris controls after each storm event. Repair or replace damaged perimeter sediment and debris controls as necessary.

LXIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Type II Crew @ $3,500 / day X 2 crews X 7 days	**$49,000**
Hydrologist GS-11, 80 hours @ $30.00/hr	**$2,400**
TOTAL PERSONNEL SERVICE COST	**$51,400**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
26,800 ft. (estimate 200 ft./site) of straw bales, straw wattles, or silt fence and installation material (wood stakes, rebar, fence post, and wire. Delivered appropriate amounts of material at each reservation.	**$160,800**
TOTAL MATERIAL AND SUPPLY COST	**$160,800**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Site**	**$1,584**	**134**	**$212,200**	**ESR**	**P,C**
2005						
2006						
TOTAL	**Site**	**$1,584**	**134**	**$212,200**	**ESR**	**P,C**

FUNDING SOURCES	SPECIFICATION TYPE	METHOD OF COMPLETION
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**P,C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

LXIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Soil and Watershed Assessment Appendix I.

LXV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**40**	**$63,343**
BIA-SPA(Paradise)	**67**	**$106,089**
BIA-RIN(Paradise)	**25**	**$39,600**
BIA-SMA(Old)	**2**	**$3,168**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**40**	**$63,343**
BIA-Paradise	**92**	**$145,689**
BIA-Old	**2**	**$3,168**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**134**	**$212,200**
GRAND TOTALS	**134**	**$212,200**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**DAM INSPECTION**	**JURSIDICTIONS:**	**BIA-VIE (Cedar)**
PART E: LINE ITEM:	**W-6, Dam Inspection**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

LXVI. WORK TO BE DONE

A. General Description:

Complete a professional engineering review of the following: 1) the post-fire hydrologic peak-flow estimates for the Ma Tar Awa reservoir on the Viejas Indian reservation, 2) review existing dam structure, 3) analyze the downstream effects if dam is breached, 4) prepare if needed an initial design of any improvements to the structure to prevent dam failure.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a; Site 69, Map Volume and Appendix IV Treatment Table for specific UTM coordinance.

C. Design/Construction Specifications:

1. Review the hydrologic assessment completed by the DOI BAER Watershed Specialists. Using that information and or develop other hydrologic post-fire estimates for the Ma Tar Awa reservoir.
2. Survey entire dam embankment and spillway for engineering integrity.
3. Calculate using accepted engineering principles the amount of flow capacity that would breach the dam.
4. Analyze any downstream impacts from failure to the dam structure.
5. If needed develop an initial design of improvements to prevent dam failure.

D. Purpose of Treatment Specification:

To determine if the Ma Tar Awa dam is structurally sound to prevent overtopping from flood flows in upper Viejas creek.

E. Treatment Effectiveness Monitoring

The Region BIA Safety of Dam Engineer will review the findings from the assessment and any needed design work.

LXVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Civil Engineer @ $125/hr X 24 hours X 1 = $3000	**$3,000**
(estimated 1 days field survey, 1 day assessment, 1 day report development, and 1 day design work if needed)	
Civil Engineering technician @ $85/hr x 12 hours = $1,020	**$1,020**
(estimated 0.75 days survey, and 0.75 days CAD drawings of improvements)	
TOTAL CONTRACT COST	**$4,020**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**1**	**$4,020**	**1**	**$4,020**	**ES**	**C**
2005						
2006						
TOTAL					**ES**	**C**

FUNDING SOURCES	SPECIFICATION TYPE	METHOD OF COMPLETION
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

LXVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13a, Map Volume, and Watershed Treatment Table Appendix IV.

LXIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-VIE(Cedar)	**1**	**$4,020**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**1**	**$4,020**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**1**	**$4,020**
GRAND TOTALS		**$4,020**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**SOIL SAMPLING**	**JURSIDICTIONS:**	**BIA-BAR**
PART E: LINE ITEM:	**W-7, Soil Sampling**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

LXX. WORK TO BE DONE

A. General Description:

Soil Samples will be collected from the salvage yard on Barona Indian reservation that may contain chemicals hazardous to the environment, and analyzed by a California Department of Health Services approved laboratory for the specified analyses.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a; Sites 15, and 16, Map Volume and Appendix V Treatment Location Table for specific UTM coordinance.

C. Design/Construction Specifications:

6. Each sample will be collected in two 8 oz glass jars.
7. Samples will be analyzed for total recoverable petroleum hydrocarbon, pH, volatile organic compounds and California Code of Regulation (CCR), Title 22 Metals (Sb, As, Ba, Be, Cd, Cr (total), Co, Cu, Hg, Pb, Mo, Ni, Se, Ag, Tl, V, and Zn). Initial waste characterization results may lead to a shorter list of metals for subsequent sediment disposal.
8. Any sample for total metals that are below the Total Threshold Limit Concentration (TTLC) but exceed the ten times Soluble Threshold Limit Concentration (STLC) will be further analyzed using the WET procedure. WET extracts will be analyzed only for metals which exceed the ten times STLC criteria.
9. Sediments associated with total metal results that exceed TTLC values are automatically considered hazardous and therefore do not need to undergo the WET procedure.
10. If any of the WET-soluble concentrations are equal to or greater than the TCLP regulatory thresholds, analyze the waste by TCLP.

D. Purpose of Treatment Specification:

To determine if there are hazardous chemicals within the salvage yard, which was burned. These chemicals have the potential to be transported by floods and harm the environment downstream from the sites.

E. Treatment Effectiveness Monitoring

The results from the soil sampling will determine if follow up mitigation is needed to remove contaminated soil from the salvage yard. If mitigation is necessary, the removal of contaminated soil will be recommended as an amendment to the Plan.

LXXI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	**COST/ITEM**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Sample and analysis @ $100/hour X 50 hours X 1 = $5,000	**$5,000**
TOTAL CONTRACT COST	**$5,000**

SPECIFICATION COST SUMMARY

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
2004	**Sample**	**$,5,000**	**1**	**$5,000**	**ES**	**C**
2005						
2006						
TOTAL	**Sample**	**$,5,000**	**1**	**$,5,000**	**ES**	**C**

FUNDING SOURCES	SPECIFICATION TYPE	METHOD OF COMPLETION
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

LXXII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13a, Appendix III, and Watershed Treatment Table Appendix V.

LXXIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-BAR(Cedar)	**1**	**$5,000**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**1**	**$5,000**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**1**	**$5,000**
GRAND TOTALS	**1**	**$5,000**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**ROAD MAINTENANCE**	**JURSIDICTIONS:**	**BIA-BAR, BIA-CGR, BIA-INA, BIA-VIE, BIA-LJO, BIA-RIN, BIA-SPA, BIA-SMA, BLM**
PART E: LINE ITEM:	**W-8 Post-Flood Event Road Clean-up**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

LXXIV. WORK TO BE DONE

A. General Description:

During major storm events low-water crossings and other sections of roadways can be expected to flood. Flood events will erode or deposit sediment and debris on the roadway making them impassible and unsafe. This specification provides for the clearing of sediment and debris from roadways after major storm events.

B. Location (Suitable) Sites:

DOI managed roads within the fire areas.

C. Design/Construction Specifications:

1. Use front-end loader and dump truck to clear debris and sediment from roadways after major storm events.
2. Deposit any removed debris out of the floodplain on high ground to prevent its transport back into channels and onto roadway

D. Purpose of Treatment Specification:

To provide for public access and safety on roadways after major storm events.

E. Treatment Effectiveness Monitoring

Inspect roadways after storm events to determine if further treatment is needed.

LXXV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Operator and Front-End Loader @ $65/hour x 276 hours X 4 flood events =	**$71,760**
Operator and Dump Truck @ $65/hr X 2 trucks X 276 hours X 4 flood events =	**$143,520**
TOTAL CONTRACT COST	**$215,280**

SPECIFICATION COST SUMMARY

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

LXXVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I

LXXVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-BAR (Cedar)	**19.3**	**$59,869**
BIA-CGR (Cedar)	**12.6**	**$39,085**
BIA-INA (Cedar)	**0.8**	**$2,482**
BIA-VIE (Cedar)	**6.3**	**$19,543**
BIA-LJO (Paradise)	**0.7**	**$2,171**
BIA-RIN (Paradise)	**0.6**	**$1,861**
BIA-SPA(Paradise)	**3.1**	**$9,616**
BIA-SMA (Old)	**5.0**	**$15,510**
BLM (Otay)	**21.0**	**$65,142**
TOTALS BY JURISDICTION BY FIRE	**69.4**	**$215,280**
BIA-Cedar	**39.0**	**$120,979**
BIA-Paradise	**4.4**	**$13,648**
BIA-Old	**5.0**	**$15,510**
BLM-Otay	**21.0**	**$65,142**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)	**69.4**	**$215,280**
BIA	**48.4**	**$150,137**
BLM	**21.0**	**$65,142**
GRAND TOTALS	**69.4**	**$215,280**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**REPLACE CULVERTS WITH ROLLING DIPS**	**JURSIDICTIONS:**	BLM
PART E: LINE ITEM:	**W-9 Replace Culverts with Rolling Dips**	**FISCAL YEAR:**	2004
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	ES

LXXVIII. WORK TO BE DONE

A. General Description:

Remove culverts that are undersized for large flows anticipated to follow rains on burned area. Install low-water crossings to permit continued access to areas above the crossing after culverts are removed.

B. Location (Suitable) Sites:

Otay Mountain Truck Trail and Minnewawa Truck Trail on Otay Fire

C. Design/Construction Specifications:

1. Remove overburden from culvert using a dozer.
2. Remove culvert using a front-end loader.
3. Load culvert onto a flat-bed truck for transport to an appropriate storage site outside the zone of fire or flood-related impacts.
4. Remove excess fill from channel and reshape banks to match natural channel width upstream and downstream.
5. For perennial stream crossings, install rolling dips immediately above approaches on both sides of stream crossing to minimize direct sediment loading to stream from overland flow concentrated in road.

D. Purpose of Treatment Specification:

Replacing undersized culverts with low-water crossings will minimize damage associated with culvert failure as a result of debris jams, undermining, and over-topping. Low-water crossings approximate natural channel morphology and permit flood water access to flood plains.

E. Treatment Effectiveness Monitoring

Inspect crossings periodically for large boulders, rutted vehicle tracks leading into water, or other signs of needed maintenance.

LXXIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Culvert removed and replaced with low-water crossing @ $900 each X 20 crossings	$18,000
Install GeoMesh at all crossings (geomesh available from Boarder Patrol at no cost)	N/A
TOTAL CONTRACT COST	$18,000

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	Rolling Dips	$900	20	$18,000	ESR	C
2005						
2006						
TOTAL	Rolling Dips	$900	20	$18,000	ESR	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

LXXX. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Watershed Assessment Appendix I.

LXXXI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BLM-Otay	**20**	**$18,000**
TOTALS BY JURISDICTION BY FIRE		
BLM-Otay	**20**	**$18,000**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BLM	**20**	**$18,000**
GRAND TOTALS		**$18,000**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**CULVERT REMOVAL & REPLACEMENT**	**JURSIDICTIONS:**	**BIA - VIE, CGR, INA, SPA**
PART E: LINE ITEM:	**W-10, Culvert Removal and Replacement**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

LXXXII. WORK TO BE DONE

A. General Description:

Remove culverts that are undersized for large flows anticipated to follow rains on burned area. Install low-water crossings to permit continued access to areas above the crossing after culverts are removed. Where feasible, replace undersized culverts with culverts capable of conveying post-fire flows.

B. Location (Suitable) Sites:

See Watershed Treatment Maps 13a and 13b, Map Volume, Watershed Treatment Table Appendix IV, and Specification Diagram Forms, Appendix V.

C. Design/Construction Specifications:

3. Review the Flow Model Results for culverts and culvert treatments on Watershed Map in Appendix III (See Soil and Watershed Assessment Appendix 1).

4. Evaluate post-fire modeled flows with appropriate culvert flow analysis model.

5. Identify and prioritize culverts for replacement.

6. Develop culvert replacement design and specifications.

7. Obtain environmental clearance from California State Water Resources Control Board, Department of Fish and Game, and Army Corps of Engineers where applicable.

8. Install culverts. On site BIA-VIE recommend replacing two existing culverts with one 24 or 36-inch culvert.

D. Purpose of Treatment Specification:

Replacing undersized culverts with low-water crossings or culverts with a higher flow capacity will minimize damage associated with culvert failure as a result of debris jams, undermining, and over-topping.

E. Treatment Effectiveness Monitoring

Inspect replaced culverts and determine If culvert size is adequate to convey the majority of the post-fire flows.

LXXXIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Rental of DH5-XL dozer delivered @ $1,100/day x 6 days	**$6,600**
Rental of CAT 320 Excavator w/ thumb delivered $1,000/day x 6 days	**$6,000**
Rental of Backhoe delivered @ $500/day x 1 days	**$500**
Rental of Sheepsfoot delivered @ 400/day x 4 days	**$1,600**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$14,700**

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Galvanized Culverts @ $20/ft x 150 ft.	**$3,000**
Culvert Collars @ $50/each x 4 each	**$200**
Gravel delivered @ $10/cubic yard x 4 yards	**$40**
Asphalt black top applied @ $20/square foot x 200 sq.ft.	**$4000**
TOTAL MATERIAL AND SUPPLY COST	**$7,240**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Heavy Equipment Operator @ $60/hour x 88 hours	**$5,280**
Hydrologist @ $100/hr x 48 hours	**$4,800**
TOTAL CONTRACT COST	**$!0,080**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Each**	**$8,005**	**4**	**$32,020**	**ESR**	**C, M**
2005						
2006						
TOTAL	**Each**	**$8,005**	**4**	**$32,020**	**ESR**	**C, M**

FUNDING SOURCES

F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C, M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

LXXXIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Maps 13a and 13b, Map Volume, and Watershed Treatment Table, Appendix IV.

LXXXV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-VIE (Cedar)	**1**	**$3,425**
BIA-CGR (Cedar)	**1**	**$9,900**
BIA-INA (Cedar)	**1**	**$9,690**
BIA-SPA (Paradise)	**1**	**$9,005**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**3**	**$23,015**
BIA-Paradise	**1**	**$9,005**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**4**	**$32,020**
GRAND TOTALS	**4**	**$32,020**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**FLOOD HAZARD SIGNS**	**JURSIDICTIONS:**	**BIA-BAR, RIN, VIE-**
PART E: LINE ITEM:	**W-11, Flood Hazard Warning Signs**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.10 Public Health And Safety**	**SPECIFICATION TYPE:**	**ES**

LXXXVI. WORK TO BE DONE

A. General Description:

Flood and mudflow hazard warning signs should be developed for immediate installation at low water crossings for the protection of life and property. These signs are necessary to inform the public of immediate danger posed by flash floods and mudflow events generated by storms.

B. Location (Suitable) Sites:

See Watershed Treatment Maps 13a and 13b, Map Volume, Watershed Treatment Table Appendix V, and Specification Diagram Forms, Appendix IV.

C. Design/Construction Specifications:

1. All signs will be constructed of DDO plywood with black lettering on a reflectorized yellow background with wording that states: WARNING - THIS AREA IS PRONE TO FLASH FLOODS AND FALLING ROCK - DO NOT ENTER DURING RAINFALL.
2. Flash flood warning signs will be 38-inches X 36-inches rectangular signs and will be mounted with 4 carriage bolts per sign on two steel U channel posts.

D. Purpose of Treatment Specification:

To provide warning to residents and the general public about potential floods, mud and debris flows, and falling rock on roads and at low water crossings.

E. Treatment Effectiveness Monitoring

LXXXVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
ten-foot steel U channel posts w/ 2 per sign @ $14.00/post x 28 =	**$392**
4 3/8 inch carriage bolts/nuts/washer assembles per sign @ $3.70 each x 56 =	**$207**
TOTAL MATERIAL AND SUPPLY COST	**$599**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Contract Labor Installation @ $65 / sign X 14 signs	**$910**
Contract Sign Production @ $50 / sign X 14 signs	**$700**
TOTAL CONTRACT COST	**$1610**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**each**	**$158**	**14**	**$2,212**	**ESR**	**C, M**
2005						
2006						
TOTAL					**ESR**	**C, M**

FUNDING SOURCES

F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C, M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

LXXXVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Maps 13a, and 13b, Map Volume, and Watershed Treatment Table, Appendix IV.

LXXXIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**5**	**$790**
BIA-RIN (Paradise)	**4**	**$631**
BIA-VIE (Cedar)	**5**	**$790**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**10**	**$1,578**
BIA-Paradise	**4**	**$631**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**14**	**$2,212**
GRAND TOTALS	**14**	**$2,212**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**STRUCTURAL PROTECTION (K-RAILS)**	**JURSIDICTIONS:**	**BIA-BAR, SPA, VIE, SYC, RIN, SMA**
PART E: LINE ITEM:	**W-12, Structural Protection (K-Rails)**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Public Life and Safety**	**SPECIFICATION TYPE:**	**ES**

XC. WORK TO BE DONE

A. General Description:

Place K-Rail (jersey) barriers around structures that are at high risk to flash floods and mudflows to divert flows around the structures.

B. Location (Suitable) Sites:

See Watershed Treatment Maps 13a, 13b, and 13d, Map Volume, Watershed Treatment Table Appendix IV, and Specification Diagram Forms, Appendix IV. On San Manuel the sites to be treated are 8, 15, 16, 19, and 40.

C. Design/Construction Specifications:

1. Install K-Rails around structures on the uphill side utilizing a low-boy transport and front end loader.
2. K-Rails should be placed end-to-end on level ground.
3. To maximize flood protection, K-Rails should be inter-pined with 30-inch length, 8 gauge rebar.
4. K-Rails delivered to site must not be placed in or near drainages.

D. Purpose of Treatment Specification:

The K-Rails serve to divert floodwaters, debris and mud flows around structures that are at high risk to flooding where straw bale check dams and sand bags will not work.

E. Treatment Effectiveness Monitoring

Inspect K-Rail performance after major flood events and make necessary adjustments to improve protection of structures.

XCI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
20 foot K-Rail delivered to site @ $800 each X 185 K-Rails	**$148,000**
TOTAL MATERIAL AND SUPPLY COST	**$148,000**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Operator and Front-end Loader @ $75 / hour X 90 hours	**$6,750**
Operator and Transport Trailer@ $55 / hour X 90 hours	**$4,950**
Transport Equipment @ $150 / hour X 13 hours	**$1,950**
TOTAL CONTRACT COST	**$13,650**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**each**	**$874**	**185**	**$161,650**	**ESR**	**C**
2005						
2006						
TOTAL				**$161,650**	**ESR**	**C**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C/M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XCII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Maps 13a, 13b, and 13d, Map Volume, and Watershed Treatment Table, Appendix IV.

XCIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**51**	**$44,563**
BIA-SPA (Paradise)	**16**	**$13,980**
BIA-VIE (Cedar)	**54**	**$47,184**
BIA-SYC (Cedar)	**8**	**$6,990**
BIA-RIN (Paradise)	**5**	**$4,369**
BIA-SMA (Old)	**51**	**$44,563**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**113**	**$98,737**
BIA-Paradise	**21**	**$18,349**
BIA-Old	**51**	**$44,563**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**185**	**$161,650**
GRAND TOTALS		**$161,650**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**SAND BAGS TO PROTECT RESIDENTIAL AND OTHER STRUCTURES**	**JURSIDICTIONS:**	**BIA-BAR, RIN, SPA, VIE, SMA**
PART E: LINE ITEM:	**W-13, Sandbag Protection**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Public Life And Safety**	**SPECIFICATION TYPE:**	**ES**

XCIV. WORK TO BE DONE

A. General Description:

Place sand bags in proximity of residential and other structures to divert flood flows that overflow stream banks.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13a, 13b, and 13d, Map Volume, Watershed Treatment Table Appendix IV, and Specification Diagram Form Appendix IV.

C. Design/Construction Specifications:

1. Purchase and fill 60,298 sand bags and deliver to central location for placement.
2. Place sandbags at appropriate locations to prevent flows into structures.
3. Store any extra sandbags in locations where they can easily be deployed if needed.
4. Delivered sandbags will not be placed near or in streams.

D. Purpose of Treatment Specification:

To protect structures from flooding in the event that stream channels overflow their banks.

E. Treatment Effectiveness Monitoring

Inspect sandbag placement and height after major storm events and add additional sandbags or realign sandbags to improve effectiveness where necessary.

XCV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Type II Fire Crew @ $3,500/day x 30 days =	**$105,000**
Per diem @ $1,400/day x 30 days =	**$42,000**
Bus w/operator @ $1000/day x 30 days =	**$30,000**
TOTAL PERSONNEL SERVICE COST	**$177,000**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
60,298 sand bags delivered @ $.25 each =	**$15,075**
543 yards sand delivered @ $13 / yard =	**$7,059**
TOTAL MATERIAL AND SUPPLY COST	**$22,134**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Each**	**$3.30**	**60,298**	**$199,134**	**ESR**	**P,M**
2005						
2006						
TOTAL					**ESR**	**P,M**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P, M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

XCVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment, Appendix I, Watershed Treatment Maps 13a, 13b, and 13d Map Volume, Watershed Treatment Table, Appendix V, and Specification Diagram Form, Appendix IV.

XCVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR (Cedar)	**2,085**	**$6,886**
BIA-RIN (Paradise)	**2,465**	**$8,141**
BIA-SPA (Paradise)	**825**	**$2,725**
BIA-VIE (Cedar)	**4,923**	**$16,258**
BIA-SMA (Old)	**50,000**	**$165,124**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**7,008**	**$23,145**
BIA-Paradise	**3,290**	**$10,865**
BIA-Old	**50,000**	**$165,124**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**60,298**	**$199,134**
GRAND TOTALS	**60,298**	**$199,134**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**AERIAL SEEDING**	**JURSIDICTIONS:**	**BLM, BIA-LJO BIA-RIN**
PART E: LINE ITEM:	**V-1, Aerial Seeding**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.1 Surface Stabilization**	**SPECIFICATION TYPE:**	**ES**

XCVIII. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

Vegetation on the Paradise Fire burned with moderate to high severity throughout the treatment area. The BAER Team vegetation group specialists in consultation with the BAER Team watershed group specialists determined the need for erosion control seeding and priority locations. First year effectiveness includes stabilization of ash on site, reducing topsoil loss, improving soil infiltration of moisture and replacing organic litter consumed by fire. First season vegetation establishment will be by perennial native grasses, forbs and shrubs. This seeding will be accomplished by one aerial application of seed by fixed wing aircraft ahead of or concurrent with fall moisture.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

High mortality burned areas immediately south of the San Luis Rey River and north of the Lower Hellhole and west of Rodriguez Mountain. This location is shown on Vegetation Treatment Map 7b, Map Volume (approximately 3,254 acres).

C. Provide and Number Detailed Design/Construction Specifications

1. Seed should be applied as soon as possible following the first rainfall event that mobilizes and transports loose ash down slope. Application prior to this event could result in down slope transportation and loss of seed mix along with ash. Completion date: Work must be completed within a two-day period.
2. The desired seed application rate for the native species seed mix is 25 PLS seeds/square foot (6.20 PLS pounds/acre).
3. Seed mixture: All seed shall have no less than 80% germination and 90% purity. Inert matter shall be less than 10%. Seed vendor must provide written certification that the seed quality has been tested within the past 120 days and contains no noxious weed species. The following seed is specified for use on this project. No non-native perennial species will be used.

Seed mix: 6.2 PLS pounds/per acre (25 PLS/square foot)

Species	Scientific Name	Lbs. PLS / acre
Dwarf gold fields	*Laesthenia californica*	0.11
Dwarf lupine	*Lupinus bicolor*	0.55
Purple needlegrass	*Nassella pulchra*	0.99
Small fescue	*Vulpia michrostachys*	2.72
Deer weed	*Lotus scoparius*	1.83

4. The application will be conducted by OAS-carded fixed wing aircraft, under the terms of an "end-service contract". The contractor must be licensed and bonded, and the performance bond shall not be less than 20% of the contract price. The contractor is responsible for materials necessary to complete the project (other than seed), equipment, personnel, seed handling (loading/unloading) and transportation. Seed will not be stored, but will be utilized directly from the delivery trailer. The flight paths will be recorded by GPS technology, and the contractor shall provide ARCVIEW GIS shape file electronic data records of these application paths to the local agency for records archival and project compliance purposes.

D. Describe Purpose of Treatment Specification – What Resource will be Protected

The purpose of this treatment is to establish vegetation on areas of high burn severity. Due to complete consumption of the organic soil component in this area, live seed banks are lacking or limited to the extent that satisfactory establishment of vegetation is not likely to occur within the next growing season. The establishment of perennial vegetation cover will occur during the first and second growing season.

E. Describe Treatment Effectiveness Monitoring

A separate specification for re-vegetation monitoring has been prepared. Establishment of both seeded and natural vegetation will be monitored according to the strategy outlined in the specification. Re-vegetation will be considered to be successful upon establishment of 3-5 plants per square foot on suitable sites identified in the monitoring specifications.

XCIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Contract compliance monitoring: One GS-11 natural resource specialist (one week @ $1050/week = $1050) One GS-5 natural resource technician (one week @ $580/week = $ 580)	**$1,050** **580**
TOTAL PERSONNEL SERVICE COST	**$1,630**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Approximately: 20,175 PLS Lbs. of perennial grass seed mix @ $ 22.96/lb.	**$463,218**
TOTAL MATERIAL AND SUPPLY COST	**$463,218**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Seed application using fixed wing aircraft (approximately 3,254 acres @ $ 9.00/acre) Independent seed testing (Ransom Lab, Carpinteria, CA (2 X $100)	**$29,286** **$200**
TOTAL CONTRACT COST	**$29,486**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Acres**	**$151.92**	**3,254**	**$494,334**	**ESR**	**C, P**
2005						
2006						
TOTAL						

FUNDING SOURCES	SPECIFICATION TYPE	METHOD OF COMPLETION
F= Fire Suppression ESR = Emergency Stabilization & Rehab. OP/O = Agency Operating Fund EWP = Emergency Watershed Program	ES = Emergency Stabilization R = Rehabilitation FS = Fire Suppression	P = Agency Personnel Services C = Contract EFC = Emergency Fire Contract FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	M
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

C. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Vegetation Resources Assessment and Watershed Assessment (Appendix I); Vegetation Treatments/Monitoring Map 7b, Map Volume.

CI. TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
BIA-PARADISE-RIN	36	$5469.00
BIA-PARADISE-LJO	414	$62,893.00
BLM-PARADISE	2,522	$383,132.00
OTHER LANDS-PARADISE	282	$42,840.00
TOTAL		
BIA-PARADISE	450	$68,362.00
BLM-PARADISE	2,522	$383,132.00
OTHER LANDS-PARADISE	282	$42,840.00
GRAND TOTAL		
BIA	450	$68,362.00
BLM	2,804	$425,972.00
TOTAL COST	3,254	$494,334.00

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**TREE HAZARD MITIGATION**	**JURSIDICTIONS:**	**BIA-SMA, BIA-VIE BIA-BAR, BIA-SPA BIA-RIN**
PART E: LINE ITEM:	**V-5, Imminent Tree Hazard Surveillance/Mitigation**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.4 Health & Safety**	**SPECIFICATION TYPE:**	**ES**

CII. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

Survey/mitigate (fell/prune) fire-damaged and/or fire-killed tree hazards posing immediate threat to public safety and/or property on Tribal lands within perimeter of Paradise, Cedar, and Old fires.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

Fire-damaged/fire-killed trees within striking distance of homes, home sites, other developments, and publicly traveled roads on San Pasqual, Rincon, Barona, Viejas, and San Manuel Tribal lands within perimeter of Paradise, Cedar, and Old fires.

C. Provide and Number Detailed Design/Construction Specifications

1. Survey potential tree hazards which have been structurally damaged and/or killed by fire within 1-1 ½ tree height distance of homes, home sites, other facilities, and roadways, and which would receive rating of 4 or greater according to the DOI BAER Field Reference Guidelines.
2. Mark identified tree hazards with orange paint dots at base and breast height (4.5' above ground), and "KILLER TREE" or "DANGER" orange plastic flagging.
3. Document species, size, and location (either with GPS or on map) of identified tree hazards.
4. Directionally fell tree hazards away from homes, home sites, other structures, and roads.
5. Identify highly technical trees to be removed or pruned under contract. If tree cannot be safely felled/pruned without damage to property, hire professional faller or arborist to remove.
6. Chip slash and either broadcast or haul to designated site per direction of Tribe.
7. Flush cut stumps as low as possible.

D. Describe Purpose of Treatment Specification – What Resource will be Protected

To provide for public safety/property protection.

E. Describe Treatment Effectiveness Monitoring

Complete surveillance unfinished by DOI BAER Foresters on Rincon, Barona, and Viejas Tribal lands. Monitor mitigation, confirming that all identified tree hazards (per Tree Hazard Location map) are mitigated in a timely manner (before end of calendar year) to minimize threats to life and property. Monitor, document, and report accomplishments annually. BIA or Implementation Leader should document work completion for inclusion in Annual Accomplishment Report. Re-survey all sites (including those surveyed initially by DOI BAER Foresters) annually for next two calendar years to detect new (or previously missed) tree hazards. Submit supplemental funding requests for subsequent (FY05, FY06) surveillance/mitigation activities.

CIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Surveillance: GS-9/5 Forester @ $28.54/Hr x 80 Hrs	$2283
Monitoring: GS-9/5 Forester @ $28.54/Hr x 40 Hrs	$1142
TOTAL PERSONNEL SERVICE COST	**$3425**

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
GSA Vehicle: I Mo @ $300/Mo + 2000 Mi @ $0.20/Mi	$700
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$700**
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Misc. Supplies (Tree paint, flagging, field notebooks, etc.)	$300
TOTAL MATERIAL AND SUPPLY COST	**$300**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	**$0**
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Arborist (Tree Service) 4-Person Crew + Equip. (Aerial Lift/Chipper) : $2000/Day—Approx. 10 Trees/Day	$131,800
TOTAL CONTRACT COST	**$131,800**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004						
BIA-SPA	Acres Surveyed	$0	375*	$0	ESR	P
BIA-RIN		$4.09	150	$614	ESR	P
BIA-BAR		$4.09	500	$2,045	ESR	P
BIA-VIE		$4.09	50	$204	ESR	P
BIA-SMA		$4.09	20	$82	ESR	P
2004						
BIA-SPA	Trees Felled/ Pruned	$200	264	$52,800	ESR	C
BIA-RIN		$200	65	$13,000	ESR	C
BIA-BAR		$200	300	$60,000	ESR	C
BIA-VIE		$200	25	$5,000	ESR	C
BIA-SMA		$200	5	$1,000	ESR	C
2004						
BIA-SPA	Acres Monitored	$2.06	375	$772	ESR	P
BIA-RIN		$2.06	150	$309	ESR	P
BIA-BAR		$2.06	500	$1,030	ESR	P
BIA-VIE		$2.06	50	$103	ESR	P
BIA-SMA		$2.06	20	$41	ESR	P
TOTALS						
BIA	Acres Surveyed	$4.09	720	$2,945	ESR	P
	Trees Felled/ Pruned	$200	659	$131,800	ESR	C
	Acres Monitored	$2.06	1,095	$2,255	ESR	P
GRAND TOTAL				$137,000		

*** Surveillance completed by DOI BAER Foresters**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	C
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	
P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression	

CIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Map Volume, Vegetation Treatments Maps 7a, 7b, and 7d; and Vegetation Resources Assessment, Appendix I

CV. TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
BIA-Paradise-SPA	**375 Acres** **264 Trees**	**$772** **$52,800**
BIA-Paradise-RIN	**150 Acres** **65 Trees**	**$923** **$13,000**
BIA-Cedar-BAR	**500 Acres** **300 Trees**	**$3,075** **$60,000**
BIA-Cedar-VIE	**50 Acres** **25 Trees**	**$307** **$5,000**
BIA-Old-SMA	**20 Acres** **5 Trees**	**$123** **$1,000**
	1095 Acres **659 Trees**	**$137,000**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**INVASIVE SPECIES CONTROL**	**JURSIDICTIONS:**	**BLM-PAL BIA-SPA, BIA-VIE**
PART E: LINE ITEM:	**V-3, Invasive Species Control**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.2.1 Ecological Stabilization**	**SPECIFICATION TYPE:**	**ES**

CVI. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

Control known non-native invasive species in burned areas and prevent the expansion of known populations into newly disturbed sites.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

The following sites with known locations of non-native species will be treated. See Vegetation Treatments Map
Otay Fire – Herbicidal Spraying - 267 acres.
Paradise Fire – Herbicidal Spraying - 4 acres.
Cedar Fire – Herbicidal Spraying- 38 acres

C. Provide and Number Detailed Design/Construction Specifications

1. Delineate treatment areas.
2. Spot application of Roundup herbicide by backpack sprayer to individual invasive species near towers and along truck trail road on Otay Fire.
3. Spot application of Roundup herbicide to Giant Reed (*Arundo donax)* after sprouting and using Garlon herbicide to emerging sprouts or to cut stumps for control of Tamarisk (*Tamarix spp.)* on four known infested areas of the San Pasqual Reservation on the Paradise Fire.
4. Spot application of Transline herbicide to Purple Starthistle (*Centauria calcitrapa)* on roadways within the Viejas Reservation.

D. Describe Purpose of Treatment Specification – What Resource will be Protected

Control spread of non-native invasive species into susceptible burned areas that will change the native plant composition.

E. Describe Treatment Effectiveness Monitoring

Monitor herbicidal control according to revegetation /control specification treatments. Document and GPS new infestations for inclusion into long-term integrated pest management programs.

CVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	**COST/ITEM**
Project Manager: (1) GS-11 @ $1050/week X 2 weeks = $2,100	**$2,100**
Range Technician: (1) GS-5 @ $580/week X 4 weeks = $2,320	**$2,320**
TOTAL PERSONNEL SERVICE COST	**$4,420**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	**COST/ITEM**
Backpack Sprayer: 3 sprayers @ $100/each	**$ 300**
Personal Protective Equipment (PPE): $100 per laborer X 3 laborers	**$ 300**
Vehicle rental: 2 Vehicles x 0.5 months X $400/month	**$ 400**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$1,000**

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
Herbicide: Roundup ® herbicide @ $80/gallon X 10 gallons = $800 Herbicide: Garlon ® herbicide @ $200/gallon X 1 gallon = $200 Herbicide: Transline ® herbicide @ $150/gallon X 2 gallons = $300 Colorant: Highlighter @ $20/gallon X 4 gallons = $80 Miscellaneous supplies	**$ 800** **$ 200** **$ 300** **$ 80** **200**
TOTAL MATERIAL AND SUPPLY COST	**$ 1,580**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
4 Wheel Drive Pickup: 2 X 10 days X 200 miles/day x $0.35/mile = $1,400	**$1,400**
TOTAL TRAVEL COST	**$1,400**
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Acres**	**$27.18**	**309**	**$8,400**	**ESR**	**P, C**
2005						
2006						
TOTAL						

FUNDING SOURCES

F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE

ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION

P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C, M
3. Estimate supported by cost guides from independent sources or other federal agencies.	T
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Vegetation Resources Assessment, Appendix I, and Vegetation Treatment Maps 7a, 7b, and 7c, Map Volume.

CIX. TOTAL COST BY JURSIDICTION

JURISDICTION	**UNITS TREATED**	**COST**
BIA-PARADISE-SPA	**4**	**$109**
BIA-CEDAR-VIE	**38**	**$1,033**
BLM-OTAY	**267**	**$7,258**
TOTAL		
BIA-PARADISE	**4**	**$109**
BIA-CEDAR	**38**	**$1,033**
BLM-OTAY	**267**	**$7,258**
GRAND TOTAL		
BIA	**42**	**$1,142**
BLM	**267**	**$7,258**
TOTAL COST	**309**	**$8,400**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**INVASIVE SPECIES CONTROL**	**JURSIDICTIONS:**	**BLM**
PART E: LINE ITEM:	**V-4, Invasive Species Control**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.2.3 Revegetation**	**SPECIFICATION TYPE:**	**ES**

CX. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

The Otay Fire negatively impacted an area that has increase potential to be revegetated by non-native invasive plant species. This site has been analyzed and prioritized for treatment to prevent site degradation using site preparation techniques that may include chemical methods, disking, and possible drill seeding.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

Area in the Northeast perimeter of the Otay Fire, at the mouth of Sycamore Canyon (116 48' 16"W, 32 39' 1"N). The area is entirely Bureau of Land Management land, and consists of approximately 250 acres. See Vegetation Treatment Map 7c, Map Volume.

C. Provide and Number Detailed Design/Construction Specifications

1. Site preparation will consist of: seeding areas pre-identified; appropriate clearances (NEPA and Archeological) are obtained; site preparation conducted using Roundup or similar herbicide upon emergence of non-native invasive species; calibration of seeding equipment to project specifications established and administered by the local BLM Office; seed applied at specified rates using rangeland drills; contract monitoring during the seed application phase.
2. Seed shall be tested for purity and germination rates. Before accepting delivery of seed shipment the contractor must provide written evidence that the seed conforms to the purity and germination requirements in the specification. All seed shall have no less than 80% germination and 90% purity. Inert matter shall be less than 10%. Seed must have been tested within the past 120 days and contains no noxious weed species. No non-native perennial species will be used.
3. Delivery of pre-mixed certified weed-free seed will be sold on a pure live seed basis. Seed will be delivered to a contract specified location. Seed will be applied as soon as possible after delivery. If immediate application is not possible the seed should be stored and protected from dew and rain, under cover, and protected from livestock and wildlife.
4. Seed Mix: **3.86 PLS pounds/per acre (25 PLS/square foot)**

Species	Scientific Name	% of Mix (PLS seed count basis)	Lbs. PLS/Acre
Dwarf gold fields	*Laesthenia californica*	30	0.08
Dwarf lupine	*Lupinus bicolor*	10	1.09
Purple needlegrass	*Nassella pulchra*	10	0.99
Flat-topped buckwheat	*Eriogonum fasciculatum*	15	0.22
Deer weed	*Lotus scoparius*	20	1.28
California sagebrush	*Artemisia californica*	10	0.02
White sage	*Salvia apiana*	5	0.18
Total			3.86

D. Describe Purpose of Treatment Specification – What Resource will be Protected

Protect the ecological integrity of native plant communities and provide competing vegetation to prevent further spread on non-native invasive plant species.

E. Describe Treatment Effectiveness Monitoring

A separate specification for re-vegetation monitoring has been prepared. Establishment of seeded vegetation will be monitored according to the strategy outlined in the specification. Re-vegetation will be considered to be successful upon establishment of 3-5 plants per square foot.

CXI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
One GS-11 natural resource specialist (two weeks @ $1050/week = $2100) One GS-5 natural resource technician (two weeks @ $580/week = $1160) One GS-9 Archeologist (one day @ $150/day = $150)	**$2,100** **$1,160** **$ 150**
TOTAL PERSONNEL SERVICE COST	**$3,410**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Vehicle rental: 1 vehicle X 0.5 months X $400/month Mileage for Archeologist: 230 miles @ $.36/mile = $83	**$200** **$ 83**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$283**
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Approximately 965 lbs. of seed mix @ $ 35.56/lb 35 Gallons of Roundup herbicide @ $80/gallon	**$34,315** **$2,800**
TOTAL MATERIAL AND SUPPLY COST	**$37,115**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Rangeland drill application X 250 acres X $20.00/acre X 1 Year Herbicide application using truck mounted boom sprayer X 250 acres X $40.00/acre X 1 Year	**$5,000** **$10,000**
TOTAL CONTRACT COST	**$15,000**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Acres**	**$223.23**	**250**	**$55,808**	**ESR**	**P, C**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	M
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Vegetation Resource Assessment, Appendix I. See Vegetation Treatment Map 7c, Map Volume.

CXIII. TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
BLM-OTAY	**250 acres**	**$55,808**
TOTAL COST	**250 acres**	**$55,808**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**REVEGETATION MONITORING**	**JURSIDICTIONS:**	**BLM-PAL BIA-LJO,BIA-RIN BIA-VIE, BIA-SPA**
PART E: LINE ITEM:	**V-2, Re-vegetation Monitoring**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.5 Monitoring**	**SPECIFICATION TYPE:**	**ES**

CXIV. WORK TO BE DONE

A. Provide a Brief General Description of Treatment

Conduct vegetation monitoring during spring/summer of 2004, to determine vegetation establishment within the aerial seeding (surface stabilization) unit on the high burn severity area on the northern edge of the Paradise Fire; dozer control lines and safety zones on all fires; the ICP and helibase on the Cedar (East) Fire; drill seeding (ecological stabilization) on the Otay Fire; known non-native invasive plant species locations in moderate and high severity burned areas.

B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment

All areas that were seeded; dozer lines, safety zones, ICP's, helibases and areas of known non-native invasive weeds on DOI administered lands within the fire perimeters. See Vegetation Treatment and Suppression Effects Maps.
Old Fire – 2.4 acres
Otay Fire – 562.8 acres
Cedar Fire – 83.8 acres
Paradise Fire – 3,271.1 acres

C. Provide and Number Detailed Design/Construction Specifications

1. The monitoring procedures are detailed in the attached supplemental methods and procedures. The monitoring plan will consist of field inventory and mapping of new invasive species populations.
2. Monitoring will be conducted during spring/summer 2004.

D. Describe Purpose of Treatment Specification – What Resource will be Protected

This treatment is necessary to determine: 1) if grass root penetration through hydrophobic soils is adequate within a reasonable time after seeding treatment; 2) if total vegetation establishment (seeded plants and natural resprouts/seedlings) or other effective cover is adequate to protect the site from erosion; 3) if noxious weeds or other non-native invasive plants are establishing.

E. Describe Treatment Effectiveness Monitoring

This monitoring will determine the effectiveness of the seeding and natural establishment of vegetation in conjunction with land stabilization treatments. Management decisions that will be based upon the monitoring results include; 1) the need for additional seeding and 2) the need for non-native invasive species control. Additional seeding is justifiable if monitoring concludes that the "criteria for re-vegetation success" is not achieved. These criteria are attached as an addendum to this treatment specification. If the criteria are not achieved, a supplemental funding request will be submitted. A supplemental funding request for non-native invasive plant control will also be submitted if monitoring reveals the establishment of these plants described in the specification addendum.

CXV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
(2) GS-11 Range Conservationists or Botanists (2 X $1050/week X 2 = $4200)	**$4,200**
(2) GS-5 Range Technician (2 X $580/week X 2 = $2320)	**$2,320**
TOTAL PERSONNEL SERVICE COST	**$6,520**
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Vehicle rental: 2 four wheel drive vehicles X 2 weeks X $100/week =	**$ 400**
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$ 400**

MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
One time cost per agency: Monitoring supplies: 2 Digital cameras, tapes, posts, misc. supplies.	**$1,600**
TOTAL MATERIAL AND SUPPLY COST	**$1,600**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
Vehicle mileage: 2 vehicles X 100 miles/day X 20 days/month x 1 months X $0.35/mile	**$1,400**
TOTAL TRAVEL COST	**$1,400**
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Acres**	**$2.54**	**3,920**	**$9,920**	**ESR**	**P**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	T
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	P, M
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Vegetation and Watershed Assessments, Appendix I, and Vegetation Treatment Maps 7a, 7b, 7c, and 7d, Map Volume.

CXVII. TOTAL COST BY JURSIDICTION

JURISDICTION	UNITS TREATED	COST
BIA-PARADISE-RIN	**36**	**$91.00**
BIA-PARADISE-LJO	**428**	**$1,083.00**
BIA-PARADISE-SPA	**4**	**$10.00**
BIA-CEDAR-VIE	**84**	**$213.00**
BLM-PARADISE	**2,804**	**$7,096.00**
BLM-OTAY	**562**	**$1,422.00**
BLM-OLD	**2**	**$5.00**
TOTAL		
BIA-PARADISE	**468**	**$1,184.00**
BIA-CEDAR	**84**	**$213.00**
BLM-PARADISE	**2,522**	**$6,382.00**
BLM-OTAY	**562**	**$1,422.00**
BLM-OLD	**284**	**719.00**
GRAND TOTAL		
BIA	**552**	**$1,397.00**
BLM	**3,368**	**$8,523.00**
TOTAL COST	**3,920**	**$9,920.00**

REVEGETATION MANAGEMENT CRITERIA AND MONITORING METHODS

REVEGETATION MANAGEMENT CRITERIA PER MONITORING RESULTS:

1. CRITERIA FOR REVEGETATION SUCCESS AND ACTION IF NOT ACHIEVED

   Revegetation will be considered to be successful when at least 80 percent of the burned area has
   a. a minimum vegetative density of three to five perennial plants per square foot, or
   b. less than 15 percent bare ground (i.e. cover of litter, rock greater than one half inch, basal live vegetation, and micro biotic crust is at least 85 percent.)

   If monitoring data indicate that these conditions are not met over at least 80 percent of the burned area, then additional revegetation practices and/or erosion control treatments will be necessary. A supplemental revegetation/erosion treatment plan and request for funding should be prepared.

2. CRITERIA TO INITIATE PLANNING FOR ACTION IN RESPONSE TO INVASIONS OF NON-NATIVE INVASIVE PLANTS

   If an invasion of noxious weeds or selected non-native invasive plant species is detected, the implementation team leader will organize an interdisciplinary team to develop an integrated pest management plan. The plan will be submitted to the local agencies having jurisdiction for approval. After the plan is developed and approved, funding will be requested, as needed, to implement it.

MONITORING METHODS:

1. COVER, FREQUENCY, AND DENSITY MONITORING

   Cover, frequency, and density will be monitored in late spring of 2004, and in late summer of 2004. At least one monitoring location will be established for each seeded area. The monitoring locations will be in representative areas that are not transitional from one vegetation monitoring stratum to another.

   Cover and frequency will be monitored using the Pace Frequency Method or comparable method. Density of perennial plants will be monitored by recording the number of mature (non-seedling) perennial plants per 40 centimeter square frame, every tenth placement of the frame during the Pace Frequency monitoring. This will result in 20 density measurements at each monitoring location. Multiply the average of the 20 density measurements by 0.5806 to convert to density per square foot.

2. CURRENT-YEAR ABOVE-GROUND VEGETATION PRODUCTION MONITORING

   Current-year above-ground vegetation production will be monitored in late summer of 2004. Areas identified on the Vegetation Treatment Map will be monitored in representative locations that are not transitional from one vegetation monitoring stratum to another.

3. NON-NATIVE INVASIVE PLANT SPECIES MONITORING

   Monitoring will be conducted to detect invasions by non-native invasive plant species and other listed noxious weeds. Plants to be detected by this monitoring are those on the federal noxious weed list and the California noxious weed list, and others listed in the Vegetation Resources Assessment.

   The federal noxious weed list may be found on the USDA APHIS internet site, and the California list on the California Department of Agriculture internet site.
   Areas to be monitored most carefully for these plants include dozer lines and the area reseeded by air on the Paradise Fire.

   This monitoring will be conducted in two ways:

   a. Training in identification of noxious weed and non-native invasive plant species will be provided for vegetation monitoring personnel and all other personnel who will be working in the burned area on a regular basis. These personnel will document the presence of these species while conducting their day to day activities in the burned area. Any findings will be reported in writing to the implementation team leader (leader).

   b. Personnel involved in monitoring of vegetation within the burned area will visually survey each monitoring location for the presence of noxious weed species during regularly scheduled monitoring trips. Findings will be provided to the leader.

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**REPLACE REFUGE CLOSED AREA SIGNS**	**JURSIDICTIONS:**	**FWS**
PART E: LINE ITEM:	**S-7, Replace Closed Area Signs**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.8 T&E Species Mitigation**	**SPECIFICATION TYPE:**	**ES**

CXVIII. WORK TO BE DONE

A. General Description:

The portions of San Diego National Wildlife Refuge that burned in the Otay and Cedar Fires are closed to the public for the protection of the endangered species. Standard refuge closed area signs are essential for maintaining this closure. This specification would replace signs that burned during the Otay and Cedar Fires.

B. Location (Suitable) Sites:

See Otay Suppression Treatment Map, BAER Plan Map Volume

C. Design/Construction Specifications:

1. Purchase replacements signs.
2. Contract for replacement of signs.

D. Purpose of Treatment Specification:

Signs are required to maintain closure of San Diego NWR for the protection of endangered species.

E. Treatment Effectiveness Monitoring

Inspect contract installation of signs prior to acceptance and payment.

CXIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Sign @ $ 35 / sign X 30 of Signs	$1,050
TOTAL MATERIAL AND SUPPLY COST	$1,050
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
See fence replacement specification for installation costs	
TOTAL CONTRACT COST	

Replace Closed Area Signs

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	SIGN	$35	30	$1,050	ESR	C
2005						
2006						
TOTAL	SIGN	$35	30	$1,050	ESR	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C/M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXX. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operation and Vegetation Assessment Appendix I.

CXXI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
FWS-Cedar	30 Signs	$1,050
TOTALS BY JURISDICTION BY FIRE		
FWS-Cedar	30 Signs	$1,050
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
FWS-Cedar	30 Signs	$1,050
GRAND TOTALS		**$1,050**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**BOUNDARY FENCING**	**JURSIDICTIONS:**	**BLM, FWS**
PART E: LINE ITEM:	**S-8, Boundary Fence**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.3.1 Minor Facilities**	**SPECIFICATION TYPE:**	**ES**

CXXII. WORK TO BE DONE

A. General Description:

Reconstruct boundary fencing destroyed by fire. The fence is required to maintain area closures to protect Federal endangered plant and wildlife habitat and cultural resource sites from off road vehicles. BLM lands are being closed to facilitate recovery of resources. San Diego National Wildlife Refuge is managed as a closed refuge with no public access to protect the endangered species that occur within its boundary.

B. Location (Suitable) Sites:

BLM Old Fire Fence: UTM 463281 East, 3799118 North

BLM Otay Fire Fence: See Suppression Treatment, BAER Plan Map Volume.
FWS Fence Start Point: Latitude 32 Degree 46 min. 59 sec. North – Longitude 116 Degree, 52 min. 36 sec. West

C. Design/Construction Specifications:

1. Boundary Fence: Construct barbed 4-wire fence. Construction standards are depicted in the attached illustrations.
2. Repair on BLM fence line where wooden posts burned

D. Purpose of Treatment Specification:

To protect endangered species and cultural sites from off-road vehicle and other public access.

E. Treatment Effectiveness Monitoring

Inspect fence line prior to acceptance and payment for contracted work.

CXXIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Fence materials @ $3,000 / mile X 4.1 miles	$12,300
TOTAL MATERIAL AND SUPPLY COST	$12,300
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Construct/reconstruct boundary fence 4.1 miles @ $8,000 / mile	$32,800
Repair gate @ $400	$400
TOTAL CONTRACT COST	$33,200

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	MILES	$11,098	4.1	$45,500	ESR	C
2005						
2006						
TOTAL	MILES	$11,098	4.1	$45,500	ESR	C

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C/M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXXIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Operation, Vegetation, and Cultural Resource Assessments Appendix I.

CXXV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BLM-Otay	3.0	$33,292
BLM-Old	0.1	$1,110
FWS-Cedar	1.0	$11,098
TOTALS BY JURISDICTION BY FIRE		
BLM-Otay	3.0	$33,292
BLM-Old	0.1	$1,110
FWS-Cedar	1.0	$11,098
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BLM	3.1	$34,402
FWS	1.0	$11,098
GRAND TOTALS	4.1	$45,500

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**DIVERSION CHANNEL IMPROVEMENT**	**JURSIDICTIONS:**	**BIA-BAR, BIA-SMA, BIA-RIN**
PART E: LINE ITEM:	**#38, W-14, Diversion Channel Improvement**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

CXXVI. WORK TO BE DONE

A. General Description:

Improve the drainage on existing diversion channels that are adjacent to residential structures. Excavate soil material and reshape drainage. Make minor displacements of existing structures if necessary. Existing drainages have been previously disturbed.

B. Location (Suitable) Sites:

See Watershed Treatment Maps; 13a, (Site 62),13b (Site 170), and 13d (Site 15) , Map Volume and Watershed Treatment Table for specific UTM coordinance and specification Design Forms, Appendix IV.

C. Design/Construction Specifications:

1. If necessary remove existing items that may be an obstacle to improve the drainage. (debris, trash etc.)
2. Use backhoe to excavate existing diversion channel.
3. Level off excess soil and reshape slope.
4. Replace any pre-existing items, if removed.

D. Purpose of Treatment Specification:

To reshape drainage channel to a capacity that will divert flood flows from the burned slope away from residential structure.

E. Treatment Effectiveness Monitoring

Inspect work to meet objectives described above.

CXXVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Backhoe w/operator @ $800/day x 7 = $5,600	**$5,600**
Transport w/operator @ $450/day X 7 days = $3,150	**$3,150**
TOTAL CONTRACT COST	**$8,750**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Feet**	**$2,917**	**3**	**$8,750**	**ES**	**C**
2005						
2006						
TOTAL	**Feet**	**$2,917**	**3**	**$8,750**	**ES**	**C**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXXVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Watershed Assessment Appendix I, Treatment Map 13a, 13b, and 13d, Map Volume, Treatment Table Appendix IV, and Specification Diagram Forms, Appendix IV.

CXXIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-BAR(Cedar)	**90**	**$847**
BIA-SMA(Old)	**750**	**$7,056**
BIA-RIN(Paradise)	**90**	**$847**
TOTALS BY JURISDICTION BY FIRE		
BIA-Cedar	**90**	**$847**
BIA-Old	**750**	**$7,046**
BIA-Paradise	**90**	**$847**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**930**	**$8,750**
GRAND TOTALS	**3**	**$8,750**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**EROSION CONTROL BLANKET**	**JURSIDICTIONS:**	**BIA-SMA**
PART E: LINE ITEM:	**W-15, Erosion Control Blanket**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.21.1 Surface Stabilization & Property Protection**	**SPECIFICATION TYPE:**	**ES**

CXXX. WORK TO BE DONE

A. General Description:

Install soil netting (erosion control blanket) on approximately 2 acres of slope at risk to sheet and rill erosion.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13d, Map Volume and Appendix IV Watershed Treatment Table for specific UTM coordinance.

C. Design/Construction Specifications:

Erosion control blanket shall consist of straw or wood excelsior mat secured in place with wire staples and shall conform to the following:

1. Excelsior blanket material shall consist of machine-produced mats of curled wood excelsior blanket with 80 percent of the fiber 150 mm or longer. The erosion control blanket shall be of consistent thickness and the wood fiber shall be evenly distributed over the entire area of the blanket. The top surface of the blanket shall be covered with a photo-degradable extruded plastic mesh. The blanket shall be smolder resistant without the use of chemical additives and shall be non-toxic and non-injurious to plant and animal life. Erosion blanket shall be furnished in rolled strips, 4 ft. X 225 ft. with a normal weight of approximately 90 lbs.

2. On slopes, secure netting at top by laying at least 6" of material below grade (secure with the staples and cover with at least 6" of fill). Staples should be spaced every 18" to 24". The steeper the slope, the closer staples should be placed. Apply netting by unrolling it down the slope and terminate at level area. Fold 6" of netting under itself and secure with staples or live stakes. Overlap all seams at least 2" to 6".

D. Purpose of Treatment Specification:

Soil netting is intended to capture and keep sediment on slopes. Soil netting is useful to temporarily stabilize slopes by reducing soil creep and sheet and rill erosion until permanent vegetation can get established. Organic matter and native seeds are trapped by netting, which provide a stable medium for germination. Soil netting traps fertile topsoil and retains moisture from rainfall, which aids in growth of tree seedlings. Netting will be use to protect slopes where existing netting had been burned off. Estimated about 75,000 sq-ft of netting was destroyed on numerous locations within the San Manuel Indian reservation.

E. Treatment Effectiveness Monitoring

Inspect netting after major rain events and make corrections to placement as needed.

CXXXI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
Type II Crew @ $3,500 / day X 2 days X 2 crews	**$7,500**
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Erosion netting and staples @ $200 / roll X 125 rolls	**$25,000**
TOTAL MATERIAL AND SUPPLY COST	**$25,000**

TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
TOTAL CONTRACT COST	

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Job**	**$32,500**	**1**	**$32,500**	**ESR**	**P,M**
2005						
2006						
TOTAL	**Job**	**$32,500**	**1**	**$32,500**	**ESR**	**P,M**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	P/M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXXXII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, San Manuel Watershed Treatment Map 13d, Map Volume and Watershed Treatment Table, Appendix IV.

CXXXIII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-SMA (Old)	**1**	**$32,500**
TOTALS BY JURISDICTION BY FIRE		
BIA-Old	**1**	**$32,500**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**1**	**$32,500**
GRAND TOTALS	**1**	**$32,500**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**SEDIMENT BASINS MAINTENANCE**	**JURSIDICTIONS:**	**BIA-SMA BIA-SPA**
PART E: LINE ITEM:	**W-16 Sediment Basins Maintenance**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

CXXXIV. WORK TO BE DONE

A. General Description:

Remove debris and fill from sediment basins to maximize storage capacity. After flood events remove debris and fill to maintain storage capacity.

B. Location (Suitable) Sites:

See Watershed Treatment Maps; 13b (Site 121) and 13d (Sites 1,6,9,11,12,13,14,15,16,17,22,23,24,25,26, and 27), Map Volume and Appendix IV Watershed Treatment Table for locations and UTM coordinates.

C. Design/Construction Specifications:

Use excavator or back-hoe and dump truck to remove mud and debris subsequent to draining water. Mud should be loaded into dump truck and deposited out-side the flood plain where it cannot re-enter stream channels, or transported to an approved disposal site.

D. Purpose of Treatment Specification:

To maximize basin capacity for subsequent flood events. The 16 basins on the San Manuel Indian reservation are small and will require frequent maintenance. The basin on San Pasqual Indian reservation is much larger and will only need infrequent maintenance.

E. Treatment Effectiveness Monitoring

Complete visual inspection of each basin following flood events to determine need.

CXXXV. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	

CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Excavation and removal @ $10/cubic yard x 40,000 cubic yards	**$400,000**
TOTAL CONTRACT COST	**$400,000**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Yards**	**$10.00**	**20,000**	**$200,000**	**ES**	**C**
2005	**Yards**	**$10.00**	**10,000**	**$100,000**	**ES**	**C**
2006	**Yards**	**$10.00**	**10,000**	**$100,000**	**ES**	**C**
TOTAL	**Yards**	**$10.00**	**40,000**	**$400,000**	**ES**	**C**

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	**C**
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXXXVI. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13a, Map Volume, and Watershed Treatment Table Appendix V.

CXXXVII. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-SMA(Old)	**16**	**$300,000**
BIA-SPA(Paradise)	**1**	**$100,000**
TOTALS BY JURISDICTION BY FIRE		
BIA-Old		**$300,000**
BIA-Paradise		**$100,000**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA		**$400,000**
GRAND TOTALS	**17**	**$400,000**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**CULVERT ARMORING**	**JURSIDICTIONS:**	**BIA-SMA**
PART E: LINE ITEM:	**W-17, Culvert Armoring**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

CXXXVIII. WORK TO BE DONE

A. General Description:

Install channel armoring at culverts to ensure that the stream crossings are not undermined during flood events.

B. Location (Suitable) Sites:

See Watershed Treatment Maps 13d, Map Volume, Watershed Treatment Table Appendix IV, and Specification Diagram Forms, Appendix IV. On San Manuel the sites to be treated are 10 and 37.

C. Design/Construction Specifications:

1. Install rock armor on sites 10 and 37.
2. Rock will be placed on the upstream and downstream sides of the culverts.
3. Thirty cubic yards of angular 1-foot minus material will be used on each side of the culvert.

D. Purpose of Treatment Specification:

Rock armor will protect road bed from scouring during storm events.

E. Treatment Effectiveness Monitoring

Inspect installation prior to acceptance and payment of work. Inspect sites after major storm events to determine if modifications are necessary.

CXXXIX. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	**COST/ITEM**
1 foot minus angular rock delivered @ $30/cubic yard x 120 cubic yards	**$3,600**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Contract excavator w/ thumb and operator @	**$1,680**
TOTAL CONTRACT COST	**$5,280**

Culvert Armoring

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**each**	**$2,640**	**2**	**$5,280**	**ESR**	**C, M**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C, M
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXL. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13d, Map Volume, and Watershed Treatment Table, Appendix IV.

CXLI. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA-SMA (Old)	**2**	**$5,280**
TOTALS BY JURISDICTION BY FIRE		
BIA-Old	**2**	**$5,280**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**2**	**$5,280**
GRAND TOTALS	**2**	**$5,280**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**Prevent Pipeline Damage**	**JURSIDICTIONS:**	**BIA-RIN**
PART E: LINE ITEM:	**W-18 Prevent Pipeline Damage**	**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.3.9.2 Watershed & Property Protection**	**SPECIFICATION TYPE:**	**ES**

CXLII. WORK TO BE DONE

A. General Description:

Replace and bury pipeline across Paradise Creek that is at risk to floods and mudflows.

B. Location (Suitable) Sites:

See Watershed Treatment Map 13d, Map Volume, Watershed Treatment Table Appendix IV, and Specification Diagram Forms, Appendix IV.

C. Design/Construction Specifications:

1. Contract engineer to inspect and design pipeline replacement.
2. Replace w/ 4' galvanized pipeline.

D. Purpose of Treatment Specification:

Required to protect pipeline from flooding and mudflows.

E. Treatment Effectiveness Monitoring

Inspect installation prior to acceptance and payment of work. Inspect sites after major storm events to determine if modifications are necessary.

CXLIII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
TOTAL PERSONNEL SERVICE COST	
EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	**COST/ITEM**
TOTAL MATERIAL AND SUPPLY COST	
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Engineer for design @ $100/hour x 32 hours	**$3,200**
Contract replacement of pipeline @ $400/ft x 80 feet	**$32,000**
TOTAL CONTRACT COST	**$35,200**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**each**	**$35,200**	**1**	**$35,200**	**ESR**	**C**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXLIV. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Soil and Watershed Assessment Appendix I, Watershed Treatment Map 13d, Map Volume, and Watershed Treatment Table, Appendix IV.

CXLV. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	UNITS TREATED	COST
BIA-RIN (Paradise)	**1**	**$35,200**
TOTALS BY JURISDICTION BY FIRE		
BIA-Paradise	**1**	**$35,200**
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	**1**	**$35,200**
GRAND TOTALS	**1**	**$35,200**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**IMPLEMENTATION LEADERS**	**JURSIDICTIONS:**	**BIA, BLM**
PART E: LINE ITEM:	**#1, O-1, Implementation Leader**	**FISCAL YEAR:**	**2004, 2005, 2006**
ESR REFERENCE #:	**8.5 Project Management**	**SPECIFICATION TYPE:**	**ESR**

CXLVI. WORK TO BE DONE

A. General Description:

Provide funding to contract on the open market the basic salary and indirect costs of the implementation leader position, who will provide project management for the emergency stabilization and rehabilitation treatment specifications implemented on Bureau of Indian Affairs administered lands as described in the Southern California Fires of 2003, Burned Area Emergency Response (BAER) plan. This specification also provides for the BLM hiring of a GS-11 Implementation Leader for implementation of treatments proposed for BLM lands impacted in the Southern California Fires.

B. Location (Suitable) Sites:

The treatment specifications are prescribed and will be implemented on BIA administered lands within the jurisdiction of the

Southern California Agency and BLM lands for the fires described in the Southern California Fires of 2003, Burned Area Emergency Response (BAER) plan. The BIA contracted Implementation Leader and BLM Implementation Leader will coordinate treatments such as seeding where practical to ensure uniform application of treatments across jurisdictional boundaries and to reduce costs of mobilization and application.

C. Design/Construction Specifications:

9. The Implementation Leader(s) will coordinate all aspects of emergency stabilization and rehabilitation work approved in the Southern California Fires of 2003, Burned Area Emergency Response Plan including the contracting of treatment specifications and activities, administering contracts, documenting treatments installed, maintaining financial tracking of costs, reporting rehabilitation progress, submitting supplemental requests for funding, ensuring the completion of all approved treatments, and coordinating with the Southern California Agency, BLM, and other affected agencies, and private landowners.

10. The Implementation Leader(s) will contract and coordinate on-the-ground implementation of treatments including site orientation of contractors, developing daily/weekly work plans for contractors/crews, and supervising work.

11. The Implementation Leader(s) will monitor the work to ensure compliance with all relevant Federal laws and regulations. Such laws and regulations include but are not limited to NEPA, NHPA, and all OSHA regulations and safety standards.

12. The Implementation Leader(s) will provide semi-annual accomplishment reports due October 1 and April 1 detailing percent accomplishment for each project specification, dates of completion, funds expended, quality control inspection reports, and treatment effectiveness monitoring reports.

13. At completion of the three-year funding period the Implementation Leader(s) will prepare a final accomplishment report. The final report will summarize all data requested in the semi-annual reports and provided a comprehensive and objective compendium of lessons learned of the treatment effectiveness of the prescribed treatment specifications based on the prescribed monitoring plans found in the Southern California Fires of 2003, Burned Area Emergency Response Plan. The report will be provided in hard copy and electronic formats that will be distributed within the United States Government and will be made available to the public on United States Government administered websites. None of the reports will be considered proprietary to the contracted Implementation Leader or their associated firms.

14. The terms of the BIA Implementation Leader's contract will not exceed the three year term of the Southern California Fires of 2003 Burned Area Emergency Rehabilitation Plan and may be terminated at any time within the three year period for failure to achieve the prescribed emergency treatments within their specified time frames. To further clarify, all approved emergency stabilization treatments must be completed within one year of the date of control of the fire for the specific fire for which the treatment is prescribed. All approved rehabilitation treatments must be completed within three years of the control date of the fire for the treatment specification for which the fire was prescribed. The BLM Implementation Leader will be funded for one year with the option to request additional funds dependent upon the effectiveness of treatments as determined by the results of treatment monitoring.

15. Funding for implementing treatment specifications will only be provided on a cost reimbursement basis except for mutually agreed upon start up costs as pre-approved by a warranted contracting officer and for a case by case basis of supplies and materials as pre-approved by a warranted contracting officer.

8. The Implementation Leader will comply with all federal labor laws. Overtime must be approved in advance. Overtime will not exceed ten hours in a fourteen-day pay period. Payroll records must be submitted quarterly for documentation purposes.

D. Purpose of Treatment Specification:

The intent of this specification is to provide fiscal support for proper administration of the short and long-term emergency stabilization and rehabilitation program.

E. Treatment Effectiveness Monitoring

The Implementation Leader(s) will conduct review of projects, financial accountability, and oversight and provide written and electronic monitoring reports as prescribed within the BAER Plan.

CXLVII. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item **Do not include contract personnel costs here (see contractor services below).**	
12 months @ $57,512 for 1st year (BLM)	$57,512
TOTAL PERSONNEL SERVICE COST	$57,512

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
Misc. equipment rental @ $3,000 X 3 years (BIA)	$9,000
Misc. equipment rental @ $3,000 (BLM)	$3,000
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	$12,000
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Misc. materials and supplies @ $3,000 X 3 years (BIA)	$9,000
Misc. materials and supplies @ $3,000 (BLM)	$3,000
TOTAL MATERIAL AND SUPPLY COST	$12,000
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
Implementation Leader:	
12 months @ $57,512 for 1st year (Comparable to a GS-11 +. 27 % EBC)	$57,512
3 months @ $14,378 for 2nd year	$14,378
3 months @ $14,378 for 3rd year	$14,378
Administrative Support: 12 months @ $47,533 for 1st year (Comparable to a GS-9 + .27 % EBC)	$ 47,533
3 months @ $11,883 for 2nd year	$11,883
3 months @ $11,883 for 3rd year	$11,883
TOTAL CONTRACT COST	$157,567

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	LEADER	$87,279	2	$174,557	ESR	C/P
2005	LEADER	$32,261	1	$32,261	ESR	C
2006	LEADER	$32,261	1	$32,261	ESR	C
TOTAL	LEADER	$239,079	2	$239,079	ESR	C/P

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	C/P
3. Estimate supported by cost guides from independent sources or other federal agencies.	
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CXLVIII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
See Executive Summary for details on transition of implementation by Implementation Leaders.

CXLIX. SPECIFICATION COST TOTALS

TOTALS BY JURISDICTION BY FIRE BY UNIT	**UNITS TREATED**	**COST**
BIA	1	$175,567
BLM	1	$63,512
TOTALS BY JURISDICTION BY FIRE		
BIA	1	$175,567

BLM	1	$63,512
GRAND TOTALS BY JURISDICTION (ALL FIRES AND UNITS)		
BIA	1	$175,567
BLM	1	$63,512
GRAND TOTALS	2	**$239,079**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITAITON PLAN

PART F - SPECIFICATION

SPECIFICATION TITLE:	**Plan Preparation**	**JURSIDICTIONS:**	**All Jurisdictions**
PART E: LINE ITEM:		**FISCAL YEAR:**	**2004**
ESR REFERENCE #:	**6.1**	**SPECIFICATION TYPE:**	**ES**

CL. WORK TO BE DONE

A. Provide a Brief General Description of Treatment
To prepare the Burned Area Emergency Response Plan for Department of Interior and tribal trust lands affected by the 2003 Southern California Fires.
B. Describe Specific Treatment Location or General Description of Suitable Sites for Treatment
This specification is an activity that does not occur in explicit treatment sites.
C. Provide and Number Detailed Design/Construction Specifications
1. Conduct a detailed assessment of the burn severity and determine fire impacts that need to be managed or mitigated in order to protect life and property and conserve trust resources. This will be in accordance with appropriate policy and regulations. **2. Write specifications based on assessment recommendations.** **3. Submit the plan for approval and secure funding from appropriate sources.** **4. Per policy, complete annual reports with monitoring narratives and cost details.**
D. Describe Purpose of Treatment Specification – What Resource will be Protected
The purpose of this specification is to prepare a comprehensive Burned Area Emergency Response Plan to assess and prescribe treatment to mitigate post fire effects on Department of Interior and tribal trust lands.
E. Describe Treatment Effectiveness Monitoring
The plan details monitoring for treatment effectiveness as prescribed for each treatment specification. Annual and final reports will be prepared to document the treatment monitoring.

CLI. LABOR, EQUIPMENT, MATERIALS, AND OTHER COST:

PERSONNEL SERVICES (Grade @ Cost/Hours X # Hours X # Fiscal Years = Cost/Item
Do not include contract personnel costs here (see contractor services below).

Personnel	Hourly Rate	Total Hours	Cost
Team Leader	$36.00	140	$11,880.00
Asst. Team Leader	$32.00	24	$4,416.00
Tribal Liaison	$32.00	140	$10,560.00
Operations	$32.00	140	$10,560.00
Operations	$30.00	126	$8,130.00
Operations	$38.00	140	$12,540.00
Operations	$28.00	112	$5,684.00
Operations	$28.00	112	$5,684.00
Forester	$28.00	140	$9,240.00
Forester	$32.00	140	$10,560.00
Forester	$28.00	140	$9,240.00
Vegetation	$28.00	140	$9,240.00
Agency Rep	$38.00	16	$1,824.00
Vegetation	$30.00	140	$9,900.00
Wildlife	$38.00	140	$12,540.00
Wildlife	$30.00	140	$9,900.00
Documentation	$32.00	140	$10,560.00
Photographer	$30.00	140	$9,900.00
Hydrologist	$28.00	140	$9,240.00
Hydrologist	$30.00	140	$9,900.00
Hydrologist	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Soils	$30.00	140	$9,900.00
Archeologist	$30.00	42	$6,090.00
Archeologist	$30.00	140	$9,900.00
Archeologist	$30.00	140	$8,760.00
Compliance	$30.00	140	$9,900.00
Compliance	$30.00	140	$9,900.00
Compliance	$30.00	112	$5,580.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$25.00	124	$6,656.25
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
GIS	$30.00	140	$9,900.00
Admin Support	$30.00	42	$6,090.00

TOTAL PERSONNEL SERVICE COST **$373,074**

EQUIPMENT PURCHASE, LEASE, OR RENTAL (Item @ Cost/Hours or Cost/Day or # Days X # Fiscal Years = Cost/Item) Note: Purchase requires written justification that demonstrates cost/item benefits over lease or rental.	
	$0
TOTAL EQUIPMENT PURCHASE, LEASE, OR RENTAL COST	**$0**
MATERIAL AND SUPPLIES (Item @ Cost/Each X Quantity X # Fiscal Years = Cost/Item)	
Print 75 plans at $25 per plan = $1,875 **Purchase miscellaneous office supplies, $500**	**$1,875** **$500**
TOTAL MATERIAL AND SUPPLY COST	**$2,375**
TRAVEL COST (Personnel or Equipment @ Rate X Round Trips X # Fiscal Years = Cost/Item	
41 team members, @ $169 per day X 679 man days	**$112,217**
TOTAL TRAVEL COST	
CONTRACT COST (Labor or Equipment @ Cost/Hour X # Hours X # Fiscal Years = Cost/Item)	**COST /ITEM**
	$0
TOTAL CONTRACT COST	**$0**

SPECIFICATION COST SUMMARY

					FUNDING SOURCE	
2004	**Plan**	**$6,391**	**75**	**$479,302**	**ES**	**P**
2005						
2006						
TOTAL						

FUNDING SOURCES
F= Fire Suppression
ESR = Emergency Stabilization & Rehab.
OP/O = Agency Operating Fund
EWP = Emergency Watershed Program

SPECIFICATION TYPE
ES = Emergency Stabilization
R = Rehabilitation
FS = Fire Suppression

METHOD OF COMPLETION
P = Agency Personnel Services
C = Contract
EFC = Emergency Fire Contract
FC = Crew Labor Assigned to Fire

SOURCE OF COST ESTIMATES

Put Letter (P,M,T,C, or F) Next to Appropriate Cost Estimate Source (1-5) Below	
1. Estimate obtained from 2-3 independent contractual sources.	
2. Documented cost figures from similar project work obtained from local agency sources.	
3. Estimate supported by cost guides from independent sources or other federal agencies.	P/M
4. Estimates based upon government wage rates and material cost.	
5. No cost estimate required – cost charged to Fire Suppression Account (not tracked in plan)	

P = Personnel Services M = Materials/Supplies T = Travel C = Contract F = Suppression

CLII. RELEVANT DETAILS, MAPS, AND DOCUMENTATION INCLUDED IN THIS REPORT

List Relevant Documentation and Cross-References within ESR Plan
Detailed cost estimate worksheets.

CLIII. TOTAL COST BY JURSIDICTION

JURISDICTION	**UNITS TREATED**	**COST**
All Jurisdictions		**$479,302**
TOTAL COST		**$479,302**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

APPENDIX I. RESOURCE ASSESSMENTS

- **SOIL AND WATERSHED RESOURCE ASSESSMENT**
- **VEGETATION RESOURCE ASSESSMENT**
- **CULTURAL RESOURCE ASSESSMENT**
- **WILDLIFE RESOURCE ASSESSMENT**
- **OPERATIONS ASSESSMENT**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION & REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

SOIL AND WATERSHED RESOURCE ASSESSMENT

OBJECTIVES

- Assess overall watershed changes caused by the fire, particularly those that pose substantial threats to human life and property, and critical natural and cultural resources. This includes evaluating changes to soil conditions, hydrologic function, and watershed response to precipitation events,
- Develop maps of soil burn severity and watershed response,
- Identify potential flood and erosion source areas,
- Identify potential threats to life, property, cultural, and natural resources in relation to flood and erosion source areas,
- Develop treatment recommendations if necessary, and
- Identify future monitoring needs.

ISSUES

- Potential threats to human life and property within and downstream of the Cedar, Paradise, Otay, and Old Fires from potential increases in overland flow that could cause accelerated surface erosion, debris and mud flows, and flooding. These include numerous subdivisions, businesses, municipal water supply infrastructure and reservoirs, a water bottling facility, and roads within and downstream of the fires.
- Changes in water quality due to increased suspended sediment from increased soil erosion within the fire areas.
- Offsite transport of burned debris that could contain toxic or hazardous substances.

OBSERVATIONS

1. Background

1. Geology/Physiography

The four Southern California Fires assessed in this report burned approximately 471,958 acres with over 3,100 homes destroyed. Low humidity coupled with Santa Ana winds in excess of 40 mph fueled flames for several days over steep terrain. Five years of drought caused low fuel moistures which contributed to explosive fire conditions. The fires assessed in this report include the Cedar (280,059 acres), the Paradise (56,431 acres), the Otay (44,704 acres), and the Old (90,773 acres). The three fires that occurred in San Diego County are the Cedar, Paradise, and Otay. The Old Fire occurred in San Bernardino County.

Much of the burned area is characterized by high relief and steep slopes with narrow canyon bottoms and outwash alluvial fans. The elevations of the Cedar Fire range from 133 feet above MSL to 6,483 feet. The elevations of the Old Fire range from 1,284 feet above MSL to 5,658 feet. The elevations of the Paradise Fire range from 742 feet above MSL to 4,049 feet. The elevations of the Otay Fire range from 265 feet above MSL to 3,559 feet. Most of the watersheds that burned during the fire

drain to the west with a few exceptions on the eastern Cedar and Paradise Fires. Bedrock geology of the areas can be broken into two regions, the San Diego County area and the San Bernardino Mountain area.

San Diego County can be divided into three distinct geomorphic regions: the Coastal Plain region exposed west of the Peninsular Ranges, the Peninsular Range region, and the Salton Trough region exposed east of the Peninsular Ranges. The geomorphic division reflects a basic geologic difference between the three regions, with Mesozoic metavolcanic, metasedimentary, and plutonic rocks predominating in the Peninsular Ranges, and primarily Cenozoic sedimentary rocks predominating to the west and east of the central mountain range. The plutonic rocks are predominantly granites ranging from quartz diorite to granodiorite. The decomposition of these materials produce coarse grained sand called decomposed granite (DG). Weathering of these materials can be deep, creating potential for high rates of erosion, particularly in areas where vegetation has been removed by wildfires. Bedrock in these regions can be covered with Tertiary and Quaternary alluvium and colluvium deposits including marine and river terraces, fans, fluvial, and lacustrine structures. Structure is dominated by San Andreas style transpressional deformation creating a mosaic of right lateral strike-slip faulting and associated thrusting.

The geologic setting for the San Bernardino Mountains area is very similar to the geology of San Diego County with the exception of structure. Mesozoic metavolcanic, metasedimentary and plutonic rock predominate areas of relief. The plutonic rock is composed of granodiorite. Lower areas are primarily Cenozoic sedimentary rocks and can be covered by Tertiary and Quaternary alluvium and colluvium deposits with marine and river terraces, fans, fluvial, and lacustrine structures. The San Bernardino Mountains differ structurally from the San Diego area by the intensity of faulting in the area. Still dominated by San Andreas style transpressional forces, this area is a convergence of many major fault zones, including the Garlock, producing a very complicated fault network and structural pattern commonly referred to as the structural knot of California.

ii. Soils

Soils within the three fires in San Diego County (Cedar, Paradise and Otay) have been mapped by the Natural Resource Conservation Service (NRCS) (USDA, 1973). There are approximately 145 soil map units that occur within the fires. Table 1 shows the 10 largest soil map units, that comprise approximately 53% of the soils in all three fires.

Table 1. Major soil map units within the Cedar, Paradise, and Otay Fires.

Soil Map Unit	Slope %	Water Erosion Hazard
Cieneba rocky sandy loam	9-65	severe
Fallbrook sandy loam	9-30	moderate-high
San Miguel rocky silt loam	9-30	moderate-high
Rock outcrop	5-120	N/A
Friant	30-70	severe
Sheephead fine sandy loam	30-65	severe
La Posta loamy coarse sand	30-65	severe
Holland stony fine sandy loam	30-60	severe
Tollhouse rocky coarse sandy loam	30-65	severe
Redding gravelly loam	2-9	moderate to high

Below are brief descriptions of the 10 major soil map units and their pre-fire erosion hazard rating within the three fires:

Cieneba: Consists of excessively drained, very shallow to shallow coarse sandy loams that formed in material weathered in place from granitic rock. Soils are on rolling to mountainous uplands with slopes between 9 to 75 percent. Rock outcrop covers approximately 5 percent of the surface, and large boulders about 10 percent. Vegetation is dominantly flattop buckwheat, chamise, California sagebrush, and annual grasses and forbs. Slopes greater than 30 percent have high to very high erosion hazard ratings and rapid to very rapid runoff. Sheet and gully erosion are moderate.

Fallbrook: Consists of well drained, moderately deep to deep sandy loams that formed in material weathered in place from granodiorite. These soils are on uplands with slopes between 9 to 30 percent. Vegetation is annual grasses, oak or broadleaf chaparral, and intermittent areas of chamise. Erosion hazard is moderate to high and runoff is medium to rapid.

San Manuel: Consist of well drained, shallow to moderately deep silt loams that have a clay subsoil. These soils are derived from metavolcanic rock. Soils are in mountainous areas and have slopes of 9 to 30 percent. Rock outcrop covers about 10 percent of the surface. Vegetation is dominantly chamise, ceanothus, and sumac. Runoff is medium to rapid, and the erosion hazard is moderate to high.

Rock Outcrop: Occurs in rough, broken terrain. Topography ranges from low hills to very steep mountains. Large boulders and rock outcrops cover 50 to 90 percent of the total map unit. Soils are typically loam to loamy coarse sand in texture and are very shallow over decomposed granite or metamorphic rock. Vegetation is generally sparse and the runoff is very rapid.

Friant: Consist of shallow and very shallow, well drained fine sandy loams that formed in material weathered from fine-grained metasedimentary rock. These soils are on mountainous uplands with slopes between 30-70 percent. The vegetation is dominantly California sagebrush, flattop buckwheat, white sage and annual grasses. Rock outcrop covers 2 to 10 percent of the surface. Runoff is rapid to very rapid, and the erosion hazard is high to very high.

Sheephead: Consists of well-drained, shallow fine sandy loams that formed in material weathered from micaceous schist and gneiss. Soils are on mountainous uplands between 9 to 30 percent slope. Rock outcrop covers approximately 10 percent of the surface. Vegetation is dominantly chaparral. Erosion hazard is moderate to high with medium to high runoff.

La Posta: Consists of somewhat excessively drained loamy coarse sands that formed in material weathered from granodiorite. Soils occur on mountainous uplands on slopes of 5 to 50 percent. Vegetation is chaparral and annual grasses and in some areas rock outcrop covers 10 percent of the surface. Runoff is medium and erosion hazard rating is moderate to high.

Holland: Consist of well drained, moderately deep and deep fine sandy loams that formed in material weathered from micaceous schist. Soils are on mountainous uplands and have slopes of 30 to 60 percent. Vegetation is dominantly pine, live oak, incense cedar, manzanita and grasses. Runoff is rapid to very rapid, and the erosion hazard high to very high.

Tollhouse: Consists of excessively drained, shallow to very shallow coarse sandy loams that formed in material weathered from granodiorite. Vegetation is chaparral and annual grasses. Erosion hazard rating on slopes greater than 30 percent is high to very high, and runoff is rapid to very rapid. About 10 percent of the surface is rock outcrop.

Redding: Consist of well drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. These soils formed in old mixed cobbly and gravelly alluvium. The slope averages 3 percent. The topography is hummocky. Vegetation is dominantly chamise, sumac, scrub oak and annual grasses. Runoff is moderate and erosion hazard is moderate to high.

The major soils that were burned on the Reservations in San Diego County are the Cieneba and Fallbrook soils.

The soils on the Old Fire in San Bernardo County occur on mountainous uplands with steep canyons commonly having slopes of greater than 50%. These are well-drained soils that are shallow to moderately deep, and were formed in material weathered from metamorphic rock. Rilling, gully erosion, and mass wasting are the most common erosion types. This soil is dominant on the San Manuel Reservation.

iii. Climate

San Diego County has warm, dry summers and mild winters and can be broken into four physiographic provinces, the Costal Plains, the Foothills, the Mountains, and the Desert. Rainfall is heaviest during the period of November to April and infrequent in summer. The Costal Plains has the most equable climate of any of the physiographic provinces with only a light frost in the winter. The Foothills have more variation in temperature and more precipitation than the Costal Plains. The Mountain area has a wider range of temperature and receives more precipitation than either the Costal Plains or the Foothills and has generally light snowfall in winter. The Desert has the greatest variation in temperature and receives the least amount of precipitation.

The Costal Plains has an average total precipitation of 13 inches and the Mountains average about 25 to 35 inches annually. The Foothills average between 14 and 24 inches annually. The amount of rainfall diminishes rapidly down the east slope of the Mountains and averages 5 inches in the Desert. Humidity is fairly high on the Costal Plains in summer because of fog along the coast and relatively low in the Desert.

Temperatures in all provinces are coolest in January and warmest in August with the exception of the Desert which experiences the warmest temperatures in July. The Coastal Plains have a mean high temperature of 71.2 ° F and a mean low of 63.2° F. The Foothills have a mean high temperature of 75.1° F and a mean low of 48.9° F. The Mountains have a mean high of 68.1° F and a mean low of 45.0° F. The Desert has a mean high of 84.1° F and a mean low of 52.5° F.

Climate patterns for the Los Angles Basin San Bernardino Mountain area are very similar to the San Diego area. Costal Plains have more moderate temperatures with the foothills and mountains receiving greater amounts of precipitation and temperature variation with the increase of altitude. Discussion will be limited to the Lake Arrowhead and San Bernardino area due to the proximity of these areas to the Old fire.

San Bernardino has an average total precipitation of 16.2 inches and .01 inches of snow and Lake Arrowhead receives 40.2 inches of precipitation and 47.4 inches of snow. February is the wettest month in both locations with a dry summer.

Temperatures in San Bernardino and Lake Arrowhead are coolest in January and warmest in July. San Bernardino has a mean high of 80.1° F and a mean low of 49.3° F. Lake Arrowhead has a mean high of 63.0° F and a mean low of 40.4° F.

4. Hydrology

Streams within the fire areas are predominantly intermittent and ephemeral. The flow regime has two distinct periods with most of the flow in response to winter Pacific maritime fronts. These types of storms are generally long duration low intensity storms that produce gradual rises in streamflow. The other component of the flow regime is a hydrologic response to short-duration, high intensity thunderstorms. This type of storm can result in rapid rises in streamflow and flash flooding.

2. Reconnaissance Methodology

The purpose of a burned area assessment is to determine if the fire caused emergency watershed conditions and if there are values at risk from these conditions. If emergency watershed conditions are found, and values at risk are identified, then the magnitude and scope of the emergency is mapped and described, values at risk and resources to be protected are analyzed, and treatment prescriptions are developed to protect values at risk. Emergency watershed conditions include both hydrologic and soil factors; typically potential for increased flooding and sedimentation and deterioration of soil condition, particularly loss of soil cover, leading to erosion and changes in hillslope hydrologic function in the form of decreased infiltration rates.

Burned area evaluations included:

- Fire-caused changes in soil properties and hydrologic function;
- Aerial extent and strength of hydrophobic soil conditions;
- Post-fire soil infiltration rates;
- Verifying the Burned Area Reflectance Classification (BARC) map;
- Conditions of sediment source areas and erosion potential;
- Current channel and culvert capacities; and
- Threats to human life, property, critical natural and cultural resources.

The Interagency BAER Team assessed the Paradise, Otay and much of the Cedar Fires, including downstream values at risk. Watersheds within and above San Manuel Reservation on the Old Fire were also assessed. Forest Service BAER Teams assessed the remainder of the Old Fire and the Forest Service lands and adjoining state and private lands on the Cedar Fire.

The Interagency BAER Team hydrologists, soil scientists, and geologist conducted aerial reconnaissance flights and field visits to review resource conditions after the fire. The main objectives of the field visits were to 1) develop soil burn severity and watershed response maps; 2) identify and inventory values-at-risk, 3) identify the physical and biological mechanisms that are creating risks; 4) review channel morphology and riparian conditions; 5) inspect hillslope conditions; and 6) determine needs for emergency stabilization. Values-at-risk are properties and capital improvements located within or downstream of the fires that may be subject to damage from flooding, ash, mud and debris deposition, and hillslope erosion. Values-at-risk for the 2003 Southern California Fires include:

- Homes, businesses, and other structures,
- Municipal water supply infrastructure and reservoirs,
- Water bottling facility,
- RV parks and campgrounds,
- Roads and highways.

A Burned Area Reflectance Classification is a satellite derived map of post-fire condition. Spot imagery was used to determine the BARC for the Paradise and western ¾ of the Cedar Fires. Usable satellite imagery was not available for the eastern ¼ of the Cedar or the entire Otay Fire. The initial soil burn severity and watershed response maps for the areas without satellite imagery were created using the pre-fire vegetation and vegetation mortality GIS layers. The vegetation mortality was created by helicopter and field mapping of vegetation mortality conducted by the BAER Team vegetation specialists (See Vegetation Assessment, Appendix I). The vegetation burn severity map for the Old Fire was created by the Forest Service BAER Team working on that fire. The BARC maps were verified by field visits and helicopter reconnaissance to produce the final soil burn severity and watershed response maps. The

watershed response map is used to predict the hydrologic response of the watersheds and rates of erosion.

1. Soil Burn Severity

Soil burn severity is not the same concept as fire intensity and fire severity as recognized by fire behavior specialists. Fire intensity and fire severity relate to fire behavior and fire effects on overstory vegetation and ground fuels, respectively, while soil burn severity relates specifically to effects of the fire on soil conditions (e.g., amount of surface litter and duff, erodibility, soil structure). Although soil burn severity is not primarily a reflection of fire effects on vegetation, vegetative conditions and pre-fire vegetation density are among the indicators used to assess soil burn severity.

Table 2 describes terms commonly used in assessing soils and watersheds that have been burned.

Table 2. Definitions of Terms Commonly used in Soil and Watershed Burned Area Assessments

Term	Definition
Fire Intensity	Rating based on temperature, flame length, rate of spread, heat of combustion and total amount and size of fuel consumed. Accounts for convective heat rising into the atmosphere and fire effects to the overstory.
Fire Severity	Rating based on temperature, moisture content of duff and fuels lying on the ground, heat of combustion of conductive and radiant heat penetrating into the soil and affecting soil characteristics.
Soil Burn Severity	Rating of fire impacts on soil productivity and rate, and the potential for vegetation recovery. Burn severity is delineated on topographic maps as polygons. Classes of burn severity are high, moderate, low and unburned.
Watershed Response	A quantitative evaluation of the amount of soil cover; amount and distribution of impermeable surfaces (rock outcrop, hydrophobic soils), and canopy conditions. Classes of burn severity are high, moderate, low and unburned.
X-year Storm Event	Rainfall occurring with a specific probability (1 in X chance) based on historical data. For example, the 10-year storm has a 1 in 10 (10%) chance of occurring in any given year, while the 100-year storm has a 1 in 100 (1%) chance of occurring in any given year.
X-year Flood	Stream discharge with a specific probability of occurring (1 in X chance) base on historical data. The 100-year flood may or may not occur as a result of a 100-year rainfall; the two are independent.

In some cases, there may be complete consumption of vegetation by fire, with little effect on soil properties. In general, the denser the pre-fire vegetation and the longer the residence time, the more severe the effects of the fire are on soil properties. For example, deep ash after a fire usually indicates a deeper litter layer prior to the fire, which generally supports longer residence times. Increased residence time promotes the formation of water repellent layers at or near the soil surface, and loss of soil structural stability. The results are increased runoff and soil particle detachment by water and transport off-site.

Soil burn severity parameters include changes in litter and duff, loss of soil structure, destruction of fine and very fine roots in the surface horizon, and development of hydrophobic (water repellent) soil surfaces. Changes in litter/duff conditions as affected by the fire were noted and compared to pre-fire conditions. Water repellency was evaluated by observing the depth and thickness of a water repellent horizon in surface soils using an infiltrometer.

2. Soil Erosion:

Erosion potential was calculated in annual tons/acre using the Revised Universal Soil Loss Equation (RUSLE) in a spatially-based ArcView model. The GIS vegetation and soils layers were provided by the U.S. Fish and Wildlife Service. Additional soils information was gathered from the Soil Survey of San Diego Area, California (USDA 1969).

The RUSLE equation: A (tons/acre) = $R*K*LS*C$

Where *A* is the on-site soil loss expected in tons/acre, *R* is the rainfall factor, *K* is the soil erodibility value taken from the soil survey, *LS* is the slope factor accounting for slope length and step effect, and *C* is the cover factor. A spatial model (30 meter grid cell size) was run to model erosion potential within the fire. The model runs a user-specified precipitation event to predict erosion. For the Southern California Fires, the storm event modeled was a 2-year 6-hour storm ranging from 1.0 to 2.2 inches across the fire. The other RUSLE inputs are incorporated spatially using a Digital Elevation Model (DEM) for the *LS* factor and by calculating *C* factors for each different vegetation type in conjunction with burn severity (i.e., a polygon of chaparral classified as moderate watershed response is attributed with a different cover factor than a polygon of chaparral in high watershed response).

2. Watershed Response

The major determining factor influencing runoff and erosion from burned hillslopes is the amount of disturbance to the forest floor that protects the underlying mineral soil (Robichaud 2000). The unburned forest floor consists of a littler layer (leaves, needles, fine twigs, bark flakes, matted dead grass, mosses and lichens, O1 soil horizon) and a duff layer (partially decomposed remnants of the material in the litter layer, O2 soil horizon) (Martin and Moody 2001). These layers absorb most of the rainfall, provide storage of water and obstruct the flow of water on hillslopes. The combustion process converts the forest floor into ash and charcoal. Ash and small soil particles seal soil pores (Morin and Banyamini 1977, Neary et al. 1999), decreasing the infiltration rate (Fuller et al. 1995, Barfield et al. 1981) and increasing potential runoff and erosion. When the charcoal and ash are removed from the hillslope by post-fire runoff or wind, the soil is left bare and susceptible to rain splash and overland flow.

Overland flow occurs as a result of rainfall in excess of soil infiltration capacity and the storage capacity of depressions. On the unburned forest floor overland flow follows a myriad of interlinking flow paths that constantly change as organic material (litter and duff layers) and inorganic material (rock) are encountered (Huggins and Burney 1982). Consumption of the forest floor by fire alters the path of overland flow by reducing the overall length of the flow path, resulting in a concentration of flow into a shorter flow path. This concentration of overland flow increases the hydraulic energy of the flow and can result in rill erosion. At the watershed scale the reduction of hillslope flow path lengths and the formation of rills that have a high water conveyance capacity reduce the times of concentration or the amount of time for overland flow to reach a defined point within the watershed.

Overland flow is also influenced by the fire induced water repellency or hydrophobicity of soils. The reduction of infiltration due to water repellency can increase overland flow (DeBano et al. 1967). Infiltration curves for water repellent soils reflect increasing wettability over time once the soil is placed in contact with water. Infiltration increases with time because the hydrophobic substances responsible for water repellency are slightly water soluble and slowly dissolve, thereby increasing wettability. In general, hydrophobicity is broken up or is sufficiently washed away within one to two years after a fire (Robichaud, 2000).

Raindrops striking exposed mineral soil with sufficient force can dislodge soil particles and small aggregates. Once soil particles are detached by splash erosion they are more easily transported in overland flow. Surface erosion is defined as the movement of individual soil particles by a force, and is initiated by the planar removal of material from the soil surface (sheet erosion) or by concentrated removal of material in a downslope direction (rill erosion). Surface erosion is a function of four factors: 1) susceptibility of the soil to detachment, 2) magnitude of external forces (raindrop impact or overland flow), 3) the amount of protection available by material that reduces the magnitude of the external force, and 4) the management of the soil that makes it less susceptible to erosion (Foster 1982, Megahan 1986).

Cannon et al. 2000 found that the generation of debris flows at Storm King Mountain, Colorado started with significant sheetwash, rill, and rainsplash erosion and transport of burned mineral soil and dry-ravel materials from hillslopes high within contributing areas. The majority of the debris flows from Storm King Mountain initiated in 0 - and 1st order channels and hollows.

The watershed response map in the Map Volume includes four classifications that are similar to the soil burn severity classification – unburned, low, moderate, and high. The watershed response classes are based upon the primary factor driving watershed response - the condition of the ground cover and soils and the condition of the canopy. The classes are as follows:

Low watershed response	<30% mineral soil, ash and rock >1 inch and >70% canopy intact
Moderate watershed response	30%-70% mineral soil, ash and rock >1 inch 30%-70% canopy intact
High watershed response	>70% mineral soil, ash and rock >1 inch <30% canopy intact

Pre and Post-Fire Flow Modeling

Pre and post-fire flows were modeled using a modified Rational Equation run in the ArcView software environment. The model has been used to calculate peak flows for fires ranging in size from 2,500 acres to 100,000 acres using a modified Rational Formula. The modified Rational Formula was originally intended to accurately calculate peak flows for watersheds up to 640 acres in size. The primary reasons for the size limitation of the modified Rational Formula are the assumption that rainfall is distributed equally over the entire watershed and the lack of a flow routing component. This model has accurately predicted post-fire flows for watersheds up to 5,000 acres in size. Absolute peak flow values for watershed greater than 5,000 acres should be used with caution, however the increase in post-fire peak flows relative to pre-fire peak flows for watersheds greater than 5,000 acres can be used to evaluate post-fire flow conditions.

The peak flow rate is calculated using the following equation:

$Q = C' I A$

Q = peak flow rate (cubic feet per second)
I = rainfall intensity (inches per hour)
C' = runoff coefficient calculated as described below (dimensionless)
A = drainage area (acres)

Rainfall Intensity

A grid of precipitation values derived directly from NOAA isohyetal maps for San Diego County (NOAA, 2003) was used for each storm recurrence interval and duration. For the Southern California Fires analysis, the 2-year, 10-year, and 25-year recurrence interval storms of 1-hour, 6-hour, and 24-hour duration storm events were modeled.

Time of Concentration

$Tc = 0.60 \times T_L$

where:
Tc = the time of concentration (hours)
T_L = the lag time (hours)

Lag time is calculated using the following method developed by the Natural Resources Conservation Service:

$$T_L = (L^{0.8} (S_c + 1)^{0.7}) / (1900 \times S^{0.5})$$

where:
T_L = lag time (hours)
L = greatest flow length in watershed (feet)
S_c = Storage coefficient = 1000/CN – 10 (inches)
CN = Curve number

S = Average watershed slope (percent)

Flow length and average watershed slope are calculated from the DEM and grids derived from the DEM. Curve number is input as a grid.

Runoff Coefficient

$$C' = C + C_s + C_i$$

$$C_s = ((0.8 - C)\,[\ln(S - 1)]S^{0.5}) / 56$$

$$C_i = \frac{1}{[0.80 - (C + C_s] \times [1 - \frac{1}{e^i} + \ln(i + 1)]}$$

where:

C' = runoff coefficient
C = base runoff coefficient
C_s = slope adjustment factor
C_i = rainfall intensity adjustment factor
S = average ground slope of the incremental drainage (percent)
i = rainfall intensity (inches/hour)

The slope adjustment factor accounts for the fact that steeper slopes generate higher flows than shallow slopes. The intensity factor accounts for more intense storms producing more runoff.

The pre-fire and post-fire curve numbers were selected from the Flow Model Curve Number Table (Appendix IV) which was correlated to vegetation types within the fire areas. Pre-fire runoff coefficients are based upon the unburned runoff coefficient in Table 3. The unburned coefficient was derived from a conifer vegetation type and all other runoff coefficients are relative to the unburned conifer condition. For example, conifer has a natural unburned runoff coefficient of 0.10 where as chaparral has a runoff coefficient of 0.13 because the litter layer produced by chaparral vegetation can store less water relative to the litter and duff layer of a conifer forest.

The post-fire runoff coefficients (Table 4) used in the model were determined from research conducted at experimental plots in the Bitterroot National Forest (Robichaud 2000). Hydraulic conductivity rates in mm/hr were measured from simulated rainfall events applied several days after a prescribed burn. The simulator rained at a rate of 94 mm/hr on randomly located one meter square plots on natural (unburned), low severity, high severity, and high severity plus strongly hydrophobic soil plots, with three replications. Hydraulic conductivity rates (K) were reported as a range of values but the lowest number in each range for varying burn severity type was used to calculate the runoff coefficient. K values were subtracted from the total simulated rainfall to determine the amount of runoff and then divided by the rainfall rate to calculate percent runoff. Moderately burned areas were extrapolated from the low and high severity values.

Table 3. Unburned Runoff Coefficients

Veg Name	Coefficient
Agriculture	0.30
Beach Dunes	0.05
Coastal Sage Scrub	0.20
Chaparral	0.13
Coastal Sage/Chaparral Scrub	0.15
Developed	0.70
Disturbed	0.70

Eucalyptus Woodland	0.18
Forest	0.10
Grasslands/Meadows/Vernal Ponds	0.17
Open Water	0.00
Riparian	0.05
Scrub	0.25
Unvegetated	0.70
Woodland	0.18

Table 4. Post-Fire Runoff Coefficients

Plot	K (mm/hr)	Runoff rate (mm/hr)	% Runoff / Runoff coefficient
Natural (unburned)	85	9	10/0.10
Low severity	60	34	36/0.36
Moderate severity	43	52	55/0.55
High severity with strong hydrophobicity	25	69	73/0.73

Flows were bulked to account for sediment and debris that could be entrained in the post-fire peak flows. During the torrential rains of 1978 and 1980, the bulking factor for some Southern California watersheds where the entire watershed burned at high burn severity ranged from 200% to 500% (Shuirman et al., 1985). The watersheds modeled in the 2003 Southern California Fires had a mixed of burn and unburned areas. Therefore, post-fire peak flows for areas of high watershed reaponse were increased 150%. Moderate watershed response area flows were increased 100% and low watershed response areas were increased 30%. The bulking equation is as follows:

Post-fire peak flow (cfs) + (Post-fire peak flow (cfs) x % of high watershed response area x 1.5) + (Post-fire peak flow (cfs) x % of moderate watershed response area x 1.0) + (Post-fire peak flow (cfs) x % of low watershed response area x 0.3)

Pre and post-fire flows were modeled for several watersheds (See Map Volume – Analysis Watersheds Maps 14a, 14b, 14c, 14d). The watersheds were selected based on values at risk identified by the BAER Team members.

Sediment Delivery

Debris production was calculated using the Los Angeles District method for prediction of debris yield (COE, 2000). A Table showing the debris production for each of the analysis watersheds is in the Map Volume.

Since the occurrence of flood and wildfire events are independent processes, coincident-frequency analysis depicting the relationship between fire frequency and the frequency of flood events is a viable approach to determine the probabilities of occurrence of debris yield events of various magnitudes. Debris catching structures are normally used to intercept debris from a single large flood event. Flood history in Southern California clearly demonstrates the debris yield hazard as one associated with singular storm events. Normal maintenance practice is to excavate immediately following a major flood event to regain storage capacity before subsequent storms occur. During wetter years, watersheds in Southern California tend to yield an even greater proportion of their total debris load during short-term storm events. In addition, over 80% of the annual volume of suspended sediment resulted from a single storm event. The US Army Corps of Engineers Los Angeles District Method (2000) found that multiple regression analyses indicated that debris yield is most highly correlated with the peak runoff rate from a watershed. The method is intended to estimate debris yield from runoff or precipitation events of greater than 5-year recurrence. For watersheds ranging between 3 mi^2 and 10 mi^2, debris yield for a series of storm events was calculated using the following equation:

LOG Dy = 0.85(LOG Q) + 0.53(LOG RR) + 0.04(LOG A) + 0.22(FF)

Q= Discharge in cfs

RR= Relief ratio

A= Area in mi^2

For watersheds ranging between 3 mi^2 and 10 mi^2, debris yield for a series of storm events was calculated using the following equation:

LOG Dy = 0.94(LOG Q) + 0.32(LOG RR) + 0.14(LOG A) + 0.17(FF)

The discharge, Q, values used in the Los Angeles District Method are modeled post-fire peak flows estimated by the GIS Rational Method.

3. Findings

1. Soil Burn Severity and Watershed Response

Table 5 displays a summary of soil burn severity and watershed response acres and percentages by class for the Cedar, Paradise, and Otay Fires. Soil burn severity and watershed response maps are included in the Map Volume. The majority of the watersheds on the Old Fire above San Manuel Reservation were moderate soil burn severity and high watershed response.

Table 5. Soil Burn Severity and Watershed Classification

Soil Burn Severity (acres/% of fire)			Watershed Response (acres/% of fire)		
Cedar Fire					
High	24,564	9	High	185,698	66
Moderate	170,659	61	Moderate	15,163	6
Low	51,105	18	Low	45,467	16
Unburned	33,731	12	Unburned	33,731	12
Total	280,059	100	Total	280,059	100
Paradise Fire					
High	7,685	13	High	38,554	68
Moderate	37,634	67	Moderate	10,490	18
Low	5,746	10	Low	2,020	4
Unburned	5,367	10	Unburned	5,367	10
Total	56,431	100	Total	56,431	100
Otay Fire					
High	2,209	5	High	39,373	88
Moderate	9,147	20	Moderate	875	2
Low	28,892	65	Low	0	0
Unburned	4,456	10	Unburned	4,456	10
Total	44,704	100	Total	44,704	100

The Cedar, Paradise, and Otay Fires were dominated by low to moderate soil burn severity. Areas of grasslands and sparse vegetation may look black immediately post-fire, but sparse fuels provided little to burn and very short fire residence times, thus soil properties were not significantly altered. Low severity in brush or forested areas is characterized by remaining litter and duff, some of which may be charred but not entirely consumed. Shrubs and trees in low severity areas are generally mostly green and are expected to survive. Vegetation communities are expected to recover rapidly.

Areas of moderate severity are generally sparse to dense brush stands, where litter and duff were consumed. In forested areas, tree crowns are a mix of green and brown. The majority of those with brown leaves may not survive but will provide significant leaf cast that will act as a ground cover,

providing protection from erosion and raindrop impact, help reduce runoff velocity, and promote infiltration. A thin layer of weak to moderate water repellency was observed in some areas of moderate soil burn severity. Surface soil structure and fine and very fine roots were intact. Although the vegetation communities are expected to recover rapidly, post-fire runoff and erosion are expected to increase significantly over pre-fire levels until the vegetation recovers.

High soil burn severity areas showed the effects of longer periods of intense heat as observed by the complete loss of organic surface materials and thick, white ash. A discontinuous, thin water repellant layer was noted at the soil surface that will reduce infiltration. Surface soil structure does not appear to have been significantly altered and intact fine and very fine roots were common. Post-fire runoff and erosion are expected to increase significantly over pre-fire levels due to the loss of organic ground cover.

Appendix III contains photos showing examples of low, moderate, and high burn severity classes.

The majority of the Cedar, Paradise, and Otay Fires were mapped as high watershed response (see Watershed Response Maps 11a, 11b, and 11c and Watershed Response by Watershed Table in the Map Volume). The area of the Old fire evaluated in this assessment is also high watershed response. The primary watershed response of these fires is expected to include: 1) an initial flush of ash; 2) sediment deposition in low gradient stream reaches and 3) increases in peak flows that could potentially cause flooding downstream of the fire. Debris flows may also occur. The potential for increased peak flows, debris and mud flows, and sediment deposition will be the highest during the first winter after the fire. Vegetation recovery is expected to be rapid with annual forbs and grasses providing cover in the early spring. By the second winter season, annual forbs and grasses and sprouting chaparral species should provide sufficient cover to reduce watershed response from high to moderate or low, as sprouting chaparral vegetation begins to produce brush crowns and a duff/litter layer.

2. Erosion Potential

Soils within the fire occurring on steep slopes and in areas of moderate and high watershed response have a high potential for accelerated rill and sheet erosion during precipitation events. Sediment generated from moderate and high watershed response slopes has the potential to be entrained in stream flow, causing bulked water flows during flood events. Burned areas are also highly susceptible to wind erosion since protective vegetative groundcover no longer exists.

The results of the RUSLE model in Arcview are presented on the Erosion Potential Maps in the Map Volume. The results of the model showed that the majority of the fire areas before the burn experienced erosion rates between 1 to 20 tons per acre annually. Post-fire, erosion rates increased in areas of low and moderate watershed response to between 1 to 50 tons per acre. Post-fire erosion in areas of high watershed response ranged between 10 to more than 200 tons per acre, with the highest erosion potential values on areas of steep slopes (greater than 50% slope).

3. Peak Flows and Sediment Delivery

Pre-fire and post-fire watershed parameters that influence peak runoff are shown in the Watershed Parameters Tables in the Map Volume. An analysis comparing pre-fire and post-fire peak runoff and sediment yields is shown in Discharge Analysis And Debris Yield Analysis Tables and in the Map Volume. These tables illustrate predicted changes in peak runoff that could result from burned hillslopes. Flood potential will decrease as hillslopes re-vegetate, increasing ground cover and providing organic matter to the forest floor that will gradually increase soil infiltration capacity and hillslope roughness. Hillslopes dominated by grasses will fully recover within 1 to 3 years. Where shrubs were the dominant vegetation, full recovery should occur within 5 years. Recovery of forested ecosystems may take decades.

Table 6 summarizes the chance of various return interval events occurring within 7 years after the fire. This "Risk" analysis evaluates the chance that an event of "T" recurrence interval will be equaled or exceeded in "n" years after the fire.

Table 6. Summary of "Risk" of Equal or Exceeded Recurrence Intervals within a 7-Year Period

Return Interval "T"	Risk within 1 year	Risk within 2 years	Risk within 3 years	Risk within 4 years	Risk within 5 years	Risk within 6 years	Risk within 7 years
2	50%	75%	88%	94%	97%	98%	99%
10	10%	19%	27%	34%	41%	52%	52%
25	4%	8%	12%	15%	18%	25%	25%
50	2%	4%	6%	8%	10%	11%	13%
100	1%	2%	3%	4%	5%	6%	7%

Peak flow increases for the 1 hour, 6 hour, and 24 hour storm events with recurrence intervals of 2, 10, and 25 years range from 5% to 481% (See Discharge Analysis Tables in Map Volume). Watersheds of concern include Watershed 187 which drains the San Luis Rey River watershed which is critical habitat for the arroyo toad. The 10 year 1 hour bulked peak flow is predicted to increase 24%. The 10 year 1 hour peak flow for San Vincente Creek where it enters San Vincente Reservoir (Watershed 196) is predicted to increase 271% and the predicted debris yield associated with the 10 year 1 hour storm is 1,041,015 yd^3. Debris yield associated with 10 year 1 hour storm for Dulzura Creek (Watershed 198) where it enters Lower Otay Reservoir is estimated at 1,322,759 yd^3. Debris yield from the 10 year 1 hour storm for the San Diego River where it enters El Capitan Reservoir is predicted to be 3,825,483 yd^3. The 25 year 1hour debris yield for San Creek on the Old Fire is estimated at 178,167 yd^3.

4. Values at Risk

Values at risk from erosion, flood or debris flows include human life, safety, and property and critical natural and cultural resources. The BAER Team members conducted a rapid assessment of life and property values at risk within and downstream of the fires. Due to the large number of values at risk and the short time frame, values at risk on private land were identified but not evaluated in detail. Values at risk maps were created for the Cedar, Paradise, and Otay Fires (See Values at Risk Maps 12a, 12b, and 12c in the Map Volume). These maps were also posted to an FTP website (ftp://ftp.oes.ca.gov/fires/fires2003/south_zone_fires_products) which allows them to be downloaded by the County of San Diego, NRCS, FEMA and other interested parties. Each value at risk on the maps are labeled with an ID number. The Values at Risk Table in Appendix IV lists each site and provides a short description of what is at risk.

Field reviews within and downstream of the burned area confirm that threats to life exist on all the fires. Numerous homes and other structures are at risk from flooding and/or debris flows. Roads on federal land, County Roads, and State Highways are also at risk.

Threats to property also exist. Numerous structures are located in or near the floodplains within the fire area or downstream. Roads in the area often have culverts or other drainage features that are inadequate to pass expected post-fire flood flows which will threaten these investments. Four municipal water supply reservoirs are located within the fire areas. Capacity may be reduced in these reservoirs as increased sediment loads are deposited in the reservoirs. Water quality degradation is also expected. Burned structures, vehicles and other debris located on floodplains could be transported downstream during flood flows. Chemical constituents in this debris may impair water quality. The water bottling facility on the San Manual Reservation is at risk from flooding and debris flows.

Cultural sites and threatened and endangered species habitat are subject to increased runoff and erosion.

Cedar Fire

The Barona, Viejas, Cuyapaipe, Capitan Grande, Inaja-Cosmit, and Sycuan Reservations were evaluated within the Cedar Fire. Many homes are at risk from flooding and/or debris flows on Barona and Viejas Reservations and one home is at risk on the Sycuan Reservation. Treatments have been prescribed for individual structures and property (see Watershed Treatment Map 13a in the Map Volume). Other values at risk include the golf course at Barona and the RV park at Viejas. Hydromulching is recommended on the slopes behind the golf course and in the Peutz Valley watershed. Hydromulch treatments are being recommended to provide an effective and immediate ground cover on the highly erodible soils that have high values at risk below. Flood warning signs are recommended on the Barona and Viejas Reservations. Undersized culverts and debris in channels were noted within both reservations and treatments have been recommended at those sites.

Paradise Fire

The Rincon, La Jolla, and San Pasqual Reservations were evaluated within the Paradise Fire. Many homes are at risk from flooding and/or debris flows on Rincon and San Pasqual Reservations and treatments have been prescribed for individual structures and property (see Watershed Treatment Map 13b in the Map Volume). Other values at risk include a waterline in Paradise Creek and a wellhead on the Rincon Reservation, and the Escondido Canal and siphon. Flood warning signs are recommended at two low water crossings on Paradise Creek. Undersized culverts and debris in channels were noted within both reservations and treatments have been recommended at those sites.

Otay Fire

The Bureau of Land Management lands were evaluated within the Otay Fire. The Otay Mountain and Minnewawa Truck Trails are at risk from flooding, debris flows and rockfall. It is recommended that undersized culverts be removed and replaced with rolling dips.

Old Fire

The watersheds draining to San Manuel Reservation on the Old Fire were evaluated. Values at risk on the reservation include the community center, casino, water bottling facility, roads, homes, fire station currently under construction, well heads, and a pump station. Values at risk downstream of the reservation include public safety and property damage due to flooding at the 10x20 foot double box culvert under Lynwood Avenue on Sand Canyon Creek. A debris jam formed at this box culvert in 1997after a thundercell rained over the recently burned Sand Canyon watershed and produced flooding within urban areas up to 2 miles downstream (See Appendix IV, Supporting Documents). Serrano Middle School located near the intersection of Franklin and Bangor Streets is at risk of flooding if the culvert near the intersection of Sharon and Bangor Streets plugs or overtops. The water bottling facility was built in the confluence of two drainages and culverts have subsequently been built to pipe flow underneath the facility. These culverts may be obstructed causing flow and debris to back up and be diverted into the facility. The drainage system built throughout the reservation to direct flow away from homes and roads, including concrete v-ditches, culverts and a series of sediment basins along Amber Hill Street, may not have the capacity to carry post-fire flows and suspended sediment. Treatments have been prescribed to protect the identified values at risk (see Watershed Treatment Map 13d in the Map Volume).

Treatments Considered but Not Recommended

Other than the aerial seeding of grass on a small portion of the Paradise Fire and spot hydromulching on slopes above values at risk, no extensive areas of upland watershed/erosion control treatments have been identified (e.g. log erosion barriers, straw wattles, straw mulching etc.). There are several reasons for this situation. 1) Many of the burned hillslopes do not lend themselves to treatments such as contour felled logs, straw wattles, or log erosion barriers due to the steepness of the slope, the amount of surface rock, the undulating soil surface or the lack of trees. 2) The hydrophobic soil conditions are found in the upper 1/8 to ¼ inch of the soil surface on the majority of the soils within the burned area. This very thin, fragile hydrophobic layer is expected to break-up during an intense rainstorm due to the weak post-fire surface soil structure, and fine sandy soil texture. The energy of the raindrop impacts on the soil surface increases following a wildfire due to the lack of vegetation cover, this causes the surface soil structure to breakdown more rapidly. 3) The vegetation is

expected to recover rapidly which will quickly reestablish ground cover. 4) Feasibility of installing treatments prior to the expected first damaging rain.

Early warning systems were also not recommended. Homes most at risk of debris flows are at the base of very small watersheds. Therefore, the debris flow would impact the structure very quickly and early warning systems would not provide the residents adequate warning. Watershed response maps will be delivered to the National Weather Service (NWS). The NWS will overlay the watershed response maps with real time rainfall intensity data to determine flood risk. They will use this information to issue flood watches and warnings through the Emergency Broadcast System.

RECOMMENDATIONS

4. Fire Suppression Repair

1. See Operations Assessment

5. Emergency Stabilization

1. Management

A table of watershed treatments is located in Appendix IV. This table identifies each treatment site by its value at risk ID number and provides a short description of the treatment recommended at each site.

a. Clear Channels of Floatable Debris and Vegetation:

Situation: Debris from burned structures and vehicles as well as woody debris and vegetation are present in and near channels. This debris will become entrained in flood flows, reducing channel capacity and may create debris jams in the channel or plug culverts or bridges. These jams can divert the flow out of the channel increasing flooding. Vegetation in the channels reduces channel capacity and may cause debris jams to form.

Recommendation: Remove debris from channels and floodplains and haul out for appropriate disposal. Cut and remove brush up to 6" in diameter.

See Part F; Specification W-1, Channel Clearing

b. Culvert Cleaning:

Situation: Some culverts in areas at risk of flooding and/or debris flows are partially plugged with sediment and debris, thus reducing the amount of water that can pass through the culverts. Culverts should be recleaned as necessary following flood events.

Recommendation: Culverts in areas at risk of flooding and/or debris flows should be cleaned to ensure maximum flow capacity.

See Part F; Specification W-2, Culvert Cleaning

c. Debris Basin Design:

Situation: Infrastructure is positioned directly in the flow path of potential mud and debris flows. Debris basins will capture sediment and debris, reducing risks to downstream life and property.

Recommendation: Complete an engineering assessment for installation of eight debris basins on the San Manuel Reservation. The assessment should include debris basin designs, cost estimates, and construction oversight.

See Part F; Specification W-3, Debris Basin Design

d. Hydromulch:

Situation: Pre-burn ground cover was consumed by the fire in several areas resulting in high watershed response. Expected increases in overland runoff will threaten values at risk. First year effectiveness includes stabilizing ashes onsite, preventing loss of topsoil, improving

infiltration rates and replacing organic matter consumed by the fire. All of these are usually associated with flood and debris flow source areas, and therefore mulching has a secondary benefit of controlling flood peaks and reducing the probability of debris flows.

Recommendation: Apply hydromulch either aerially or by ground to slopes behind values at risk as identified on the Watershed Treatment maps in the map volume.

See Part F; Specification W-4, Hydromulch

e. Residence Sediment and Debris Control:

Situation: Overland flow, rills, and gullies from burned hillslopes above structures and lots will entrain burned debris, ash and soil and deliver this material to adjacent ephemeral and intermittent stream channels. Debris on floodplains can also be entrained by flood flows. Chemical constituents in the debris and soil could impair water quality. Floatable material could block downstream culverts or create debris jam receptors.

Recommendation: Place sediment control devices such as straw bales, straw wattles, or silt fences around the perimeter of the debris areas so as to contain the sediment and debris and prevent them from being mobilized into stream channels until the debris can be removed from the site.

See Part F; Specification W-5, Residence Sediment and Debris Channel

f. Dam Inspection:

Situation: The structural stability of Ma Tar Awa dam on the Viejas Reservation is unknown. Failure of the dam could result in flooding downstream of the dam.

Recommendation: Complete a professional engineering review of the following: 1) the post-fire hydrologic peak-flow estimates, 2) existing dam structure, 3) the downstream effects if dam is breached, and 4) prepare if needed an initial design of any improvements to the structure to prevent dam failure.

See Part F; Specification W-6, Dam Inspection

g. Soil Sampling:

Situation: Hazardous chemicals may be present in the soil at the burned over salvage yard on Barona Reservation. These chemicals have the potential to be transported downstream by floods and harm the environment or human health.

Recommendation: Collect soil samples and analyze them for metals and other constituents to determine if hazardous chemicals are present.

See Part F; Specification W-7, Soil Sampling

h. Post-Flood Event Road Clean-up:

Situation: During major storm events, low-water crossings and other sections of roadways can be expected to flood. Flood events will erode or deposit sediment and debris on the roadway making them impassible and unsafe.

Recommendation: Inspect roads after flood events and perform maintenance as necessary.

See Part F; Specification W-8, Post-Flood Event Road Clean-up

i. Replace Culverts with Rolling Dips

Situation: Culverts on the Otay Mountain Truck Trail and Minnewawa Truck Trail in areas at risk of flooding and/or debris flows are undersized for the predicted flows. These culverts have culvert inlets at high risk of being plugged with sediment. Undersized or plugged pipes have reduced capacity to carry flood flows.

Recommendation: Remove culverts that are undersized and replace with rolling dips. Suitable sites will be determined by a BLM engineer.

See Part F; Specification W-9, Replace Culverts with Rolling Dips

j. Culvert Removal and Replacement:

Situation: Some culverts in areas at risk of flooding and/or debris flows are undersized for the predicted flows. Other culverts have culvert inlets at high risk of being plugged with sediment. Undersized or plugged pipes have reduced capacity to carry flood flows.

Recommendation: Remove culverts that are undersized and replace with low-water crossings or larger culverts. Suitable sites are determined by flow modeling results, road usage, feasibility of replacement design and construction timing as it relates to the rainy seasons.

See Part F; Specification W-10, Culvert Removal and Replacement

k. Flood Hazard Warning Signs:

Situation: Several roads within and downstream of the fires cross stream channels that are at risk of flooding and mud and debris flows. Some of these roads are also exposed to potential falling and rolling rocks off of the burned area. Residents and the general public need to be aware of these potential hazards.

Recommendation: Install flood and rock fall warning signs on roads at locations designated on the Watershed Treatment maps 13a, 13b, and 13d.

See Part F; Specification W-11, Flood Hazard Warning Signs

l. Structural Protection (K-rails):

Situation: Several homes and other facilities lie within flood and debris flow prone areas within and downstream of the burned areas. These sites are shown on the Watershed Treatment maps 13a, 13b, and 13d. Although emergency stabilization treatments cannot prevent flooding of or damage to structures during all magnitudes of storms, treatments can be effective in reducing flooding and damage. K-rails are an effective treatment where high velocity debris flows that may carry large debris such as boulders, limbs, etc. are expected to occur, not where low velocity flooding or sediment deposition may occur.

Recommendation: Place K-rails (jersey barriers) in strategic locations around the structures to divert floods, mudflows and rolling rock away from the structures. Diagrams of where the K-rails should be placed at each site are shown on the Specification Diagram Forms in Appendix IV.

See Part F; Specification W-12, Structural Protection (K-rails)

m. Sandbag Protection:

Situation: Several homes and other facilities lie within flood prone areas within and downstream of the burned areas. These sites are shown on the Watershed Treatment maps 13a, 13b, and 13d. Although emergency stabilization treatments cannot prevent flooding of or damage to structures during all magnitudes of storms, treatments can be effective in reducing flooding and damage. Sandbags are an effective treatment where low velocity flows, or nuisance sediment deposits are expected to occur, not where higher velocity debris (i.e., boulders) flows may occur.

Recommendation: Place sandbags in strategic locations around the structures to divert floods, mudflows and rolling rock away from the structures. Diagrams of where the sandbags should be placed at each site are shown on the Specification Diagram Forms in Appendix IV.

See Part F; Specification W-13, Sandbag Protection

n. Diversion Channel Improvement:

Situation: Several structures are positioned in the paths of potential flood and debris flows. Diversion channels either do not exist or need to be maintained in order to effectively divert the flows away from the structures.

Recommendation: Improve the drainage on existing diversion channels that are adjacent to structures. Excavate soil material and reshape diversion channel to a capacity that will divert flood flows from the burned slopes away from the structures.

See Part F; Specification W-14, Diversion Channel Improvement

o. Erosion Control Blanket:

Situation: Erosion control blankets (soil netting) had been placed on slopes within the San Manuel Reservation to stabilize the soil. This netting burned during the fire. The netting needs to be replaced in order to continue to stabilize the soils.

Recommendation: Install erosion control blankets on slopes where the existing blankets had burned.

See Part F; Specification W-15, Erosion Control Blanket

p. Sediment Basin Maintenance

Situation: Several existing basins have lost capacity because they are partially or completely full of sediment.

Recommendation: Excavate sediment from basins to restore the original capacity. Transport excavated material outside of the floodplain to an area where it cannot reenter stream channels.

See Part F; Specification W-16, Sediment Basin Maintenance

q. Culvert Armoring:

Situation: Culvert inlets and outlets that are not armored are likely to scour and erode the roadbed during storm events.

Recommendation: Place rock armor at culvert inlets and outlets.

See Part F; Specification W-17, Culvert Armoring

r. Prevent Pipeline Damage:

Situation: Part or all of the domestic water system across Paradise Creek on the Rincon Reservation is at risk of destruction and/or contamination during a flood. In particular, the above-ground gravity flow line, which crosses the channel, could be torn out during a flood. There is no mechanism to protect this infrastructure.

Recommendation: Inspect the pipeline and design a treatment to protect the pipeline.

See Part F; Specification W-18, Prevent Pipeline Damage

1. Monitoring

NONE

6. Rehabilitation

1. Management

NONE

2. Monitoring

NONE

7. Management Recommendations (Non-Spec)

1. Close Otay Mountain and Minnewawa Truck Trails on the Otay Fire

Situation: Increased runoff and erosion is expected in the watersheds burned in the Otay Fire. The truck trails within the burned area are subject to increased runoff, erosion, and rock fall. Flood events may erode or deposit sediment and debris on the roadway making the roads impassible. Rocks may fall on the roadway at any time. People driving on the roads are at risk from these processes.

Recommendation: Close the Otay Mountain and Minnewawa Truck Trails to the public until the vegetation has recovered, thereby stabilizing the hillslopes.

2. Prohibit and Restrict Off Road Vehicle Use

Situation: Illegal and trespass access by off highway vehicles (OHV) to burned watersheds will likely increase because of the lack of vegetation to inhibit OHV traffic. Illegal and trespass access will delay watershed recovery and increase the formation of rills and gullies. Increased recovery time and length of rill and gully networks will increase the length of time and level of risk to downstream life and property.

Recommendation: Prohibit OHV use on all Federal, State, County, and City lands for a period of 3 years. Provide funding to private landowners to prohibit public access (e.g., fencing and gates) on private lands that are connected to Federal lands.

3. Monitor Changing Conditions Following Storms

Situation: This BAER Plan describes current conditions and prescribes treatment recommendations to mitigate potential runoff, erosion, flooding and mudflows. Conditions on the ground will change over time as a result of storm events and as revegetation occurs. Consequences of storm events may result in additional emergency conditions requiring additional treatments.

Recommendation: Monitor areas at risk of flooding, erosion, sedimentation, and mud and debris flows immediately following storm events. Clean and maintain drainage structures. Determine whether additional treatments are needed. If additional treatments are needed, prepare and submit Plan amendments promptly to ensure immediate treatment initiation.

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

VEGETATION RESOURCES ASSESSMENT

I. OBJECTIVES

- ?? Evaluate and assess fire and suppression impacts to vegetative resources.
- ?? Determine emergency stabilization, rehabilitation, and monitoring needs supported by specifications to aid in vegetative recovery and soil stabilization efforts.
- ?? Evaluate the potential for invasive plant species to encroach into native plant communities within the fire area and determine rehabilitation and monitoring needs to mitigate encroachment.
- ?? Determine effects of fire and suppression impacts to sensitive plant species, including: federally listed Threatened and Endangered (T&E) species; species listed under the interagency Multiple Species Conservation Plan (MSCP); and tribally sensitive plant species
- ?? Determine emergency stabilization and rehabilitation and monitoring needs to mitigate impacts to sensitive plant species.
- ?? Assess imminent and long-term tree hazards to the public and property and recommend mitigation.

II. ISSUES

- ?? Short and long-term effects of the fire and suppression activities on plant communities and vegetative resources including T & E and sensitive plant species.
- ?? Re-establishment of vegetation on areas disturbed by suppression activities.
- ?? Potential for invasion of impacted lands by non-native invasive plant species.
- ?? Tree hazards that may pose a threat to public, worker safety, or property.
- ?? Reestablishment of forest cover within timber, riparian, oak woodland, and oak savannah stands.
- ?? Potential timber/firewood salvage.

III. OBSERVATIONS

This report addresses known and potential impacts to vegetative resources on US Department of the Interior administered lands and tribal lands within the fires. Findings and recommendations contained in this assessment are based upon information obtained from personal interviews and meetings with staff from the Bureau of Land Management - California Desert District (BLM-CDD), Bureau of Indian Affairs - Southern California Agency (BIA-SCA), US Fish and Wildlife Service – Carlsbad Ecological Services Office (FWS), Santa Ysabel (SYS) San Pasqual (SPA), Viejas (VIE), Barona (BAR), Rincon (RIN), La Jolla (LJO) and San Manuel (SMA) Reservations, Natural Resources Conservation Service – Escondido Field Office (NRCS-EFO), California Department of Fish and Game (CA-DFG), private landowners (P), Burned Area Emergency Response (BAER) team specialists, literature reviews, and field reconnaissance of the fire area. The U.S. Forest Service, Cleveland National Forest (FS-CNF) is concurrently assessing fire effects on National Forest lands and is developing an Emergency Stabilization and Rehabilitation (ESR) plan addressing National Forest lands independent of the interagency team. USFS representatives met with the interagency team on a daily basis for coordination meetings. Assessment of affected vegetation on FWS, private, county, state and National Forest lands included mapping of vegetation mortality and ocular observations of fire effects. Recommendations for revegetation seed mixes were developed for general ecological sites within the fire, and this information was provided to San Diego County, and publicly distributed through the cooperative efforts of the NRCS-EFO.

A. Background

The Otay Fire started on October 26, 2003 near Dulzura, California in Mine Canyon and was extinguished at a final size of 44,699 acres. The Cedar Fire started on October 25, 2003 in the Pine Hills area west of Julian, California, and grew to 280,059 acres. The Paradise Fire started on October 26, 2003 near Rodriguez Peak southeast of Rincon, California. The final size of the Paradise fire is 56,428 acres. The Old Fire started on October 25, 2003 near San Bernardino, California and grew to 90,773 acres. These fires burned on federal (BLM, USFS, USFWS, military), tribal, private, municipal, county, and state lands. The fires burned within mixed Sonoran desert scrub on alluvial washes and lower slopes near the eastern edge of the burn, and through riparian habitats, chaparral, oak woodlands, and mixed conifer-oak stands occurring primarily on western aspects at the upper elevations of the burn. Due to severe drought conditions, fuel moistures of live vegetation and ground litter were at critically low levels when the fire occurred. Extremely low live fuel moistures, in combination with high temperatures, low relative humidity, and steep, rugged terrain thwarted containment attempts as the fires were driven by Santa Ana winds. Consequently, the fires burned intensely and spread very rapidly from east to west down canyon. The fires moved rapidly through most vegetation types. Later in the event winds shifted on-shore driving the fires east up canyons and slopes. The fires burned for almost two weeks until extinguished.

Vegetation Communities

The Paradise, Cedar, Old and Otay fires occurred within the Coastal Mesa Zone west of the Peninsula Range Geologic Province; the foothills and cismontane region on the east side of the Peninsula Range, Desert Slopes (M262B) and Palomar - Cuyamaca Peak (M262Bo) subsections of the Southern California Mountains and Valleys ecological sub-region (SectionM262B) (USDA Forest Service 1997) and the foothills and montane zone of the San Bernadino Mountains. The distribution of plant communities within this sub-region is greatly influenced by rainfall and topography. Elevation ranges include: Paradise fire - from 742 feet to 4,049 feet MSL; Cedar fire - from 133 feet to 6,483 feet MSL; Otay fire - from 265 feet to 3,559 feet MSL; Old fire - from 1,284 feet to 6,658 feet MSL. The area experiences a Mediterranean type climate with generally mild winters and hot and dry summers. Annual precipitation averages less than 6 inches in the lower elevation desert scrub areas. Chaparral communities occur at mid elevations within the 15 to 18 inch rainfall zone, while forest stands generally occur on upper slopes in areas that receive over 21 inches of rain annually.

A variety of vegetation communities occur within the boundaries of the Cedar, Paradise, Otay and Old fires, including Oak Woodlands, Forests, Chaparral, Coastal Sage Scrub, Big Sagebrush Scrub, Riparian, and wetlands. Tables 1.1 – 1.4 displays the vegetation type groups within each fire, by ownership and acreage. Appendix IV. contains a table indicating the vegetation series included within each general vegetation type group. Listed below are descriptions of the vegetation type strata on Department of the Interior lands found within the perimeter Fires. (This methodology of classification corresponds to the convention contained in Sawyer and Keeler-Wolf, 1995.) The following Tables summarize the major vegetation types occurring within the burned area:

Table 1.1. Cedar Fire Vegetation Groups (pre-fire), by Ownership.

Agriculture	0	903	30	29	3,272	4,234
Chaparral	3,270	15,545	151	40,337	75,961	135,264
Coastal sage scrub	644	2,801	36	8,420	33,220	45,121
Coastal sage/ Chaparral scrub	591	671	0	2,379	2,425	6,066
Eucalyptus woodland	0	23	0	3	324	350
Forest	93	464	0	2,889	19,218	22,664
Woodland	216	1,874	0	4,628	15,315	22,033
Grasslands/ meadows/ vernal pools	0	1,198	96	525	12,968	14,787
Riparian	33	721	19	1,734	4,427	6,934
Scrub	0	0	0	65	24	89
Water	0	1	0	11	2,171	2,183

Developed	6	184	0	33	14,878	15,101
Disturbed	0	32	0	0	3,809	3,841
Un-vegetated	0	28	0	4	491	1,390
Total	4,853	24,445	332	61,057	188,502	**280,059**

Tables 1.2. Paradise Fire Vegetation Groups (pre-fire), by Ownership.

Agriculture	3	92			3,086	3,181
Chaparral	2,649	2,644	300	5,606	14,190	25,389
Coastal sage scrub	433	1,092		36	3,683	5,244
Coastal sage/ Chaparral scrub		565		2,038	778	3,381
Eucalyptus woodland		5			64	69
Forest	20	9			316	345
Woodland	271	422	9	1,712	9,779	12,193
Grasslands/ meadows/ vernal pools		65	40	31	4,385	4,521
Riparian	59	63	72	72	439	705
Scrub						
Water	4			1	193	198
Developed	1	243			887	1,131
Disturbed					26	26
Un-vegetated	2				42	44
Total	3,442	5,200	421	9,496	37,868	**56,428**

Tables 1.3. Otay Fire Vegetation Groups (pre-fire), by Ownership.

		Other Federal		
Agriculture	52		289	341
Chaparral	10,652	7	4,142	14,801
Coastal sage scrub	5,574	260	15,264	21,098
Coastal sage/ Chaparral scrub	194		132	326
Eucalyptus woodland			5	5
Southern Interior Cypress Forest	5,112		577	5,689
Woodland	4		235	239
Grasslands/ meadows/ vernal pools	276		823	1,099
Riparian	54	2	436	492
Scrub				
Water			8	8
Developed			206	206
Disturbed	3		367	370
Un-vegetated	4		23	25
Total	21,925	269	22,507	**44,699**

Tables 1.4. Old Fire Vegetation Groups (pre-fire), by Ownership.

Agriculture	0	0	0	22	22
Basin sagebrush	0	0	241	8	249
Chaparral	2182	170	36719	13535	52606
Coastal sage scrub	101	522	5901	7486	14010
Developed	0	7	7	734	748
Meadow	0	27	113	296	436
Mixed Conifer	0	0	8852	2995	11847
Pine Forest	0	0	1366	0	1366
Riparian	0	5	444	335	784
Un-vegetated	28	11	190	786	1015
Water	0	0	6	917	923
Woodland	30	0	4207	2034	6271
Other	1	0	2	453	456
Total	2342	742	58048	29601	**90733**

This section briefly describes the vegetation communities which occur across the four fires and describes their typical response to wildfire and is important to understanding the BAER Teams findings and recommendations with regard to post-fire vegetation recovery.

Oak Woodlands

Oak Woodlands occur in a variety of community types. Each community type can vary from open savannas in broad valleys and rolling hills to dense woodlands in canyons and along streams. Oak woodlands are dominated by live oak trees species that include black oak (*Quercus kelloggii*), coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), and canyon live oak (*Quercus chrysolepis*). Oak woodlands typically occur in the foothills and transition into mixed conifer/oak woodlands at higher elevations.

Black Oak Woodland is dominated by black oak with an open savanna on south facing xeric slopes, or with a moderate to high-density understory shrub component on more mesic sites. Jeffrey pine is a common associate on most sites. The black oak savanna includes a variety of native grasses and forbs. The shrub component can vary including Pacific madrone (*Arbutus menziesii*), manzanita (*Arctostaphylos* ssp.), mountain mahogany (*Cercocarpus* spp.), and chamise (*Adenostoma* spp.).

Coast Live Oak Woodland is dominated by coast live oak with a poorly developed shrub layer and typically includes a non-native grass herbaceous layer. The shrub layer can include toyon (*Heteromeles arbutifolia*), current (*Ribes* ssp.), and laurel sumac (*Malosma laurina*). The grassland component is typically non-native grasses, including red brome (*Bromus madritensis rubens*) and ripgut brome (*Bromus diandrus*). Coast live oak woodland can become dense, with canyon live oak and Engelmann oak as common associates.

Engelmann Oak Woodland is a rare community in southern California that is dominated by Engelmann oak and coast live oak, with canyon live oak as an associate. Engelmann Oak Woodland can be open, with a grassland understory on xeric sites, or a moderate to dense woodland on more mesic sites. Grassland species include red brome, soft-chess (*Bromus hordeaceus*), ripgut brome, and slender wild oat (*Avena barbata*). The shrub component typically includes toyon, sugar bush (*Rhus ovata*), skunkbush (*Rhus triolobata*), and scrub oak (*Quercus dumosa*).

Oak Woodlands have evolved with fire. Open savannas can experience frequent low intensity fires where the non-native grasses burn quickly without moving into the canopy. Oak trees that do experience some canopy fire often survive the fire unless the ground fire temperture is extreme enough to kill the root system. Dense woodlands typically experience low frequency stand destroying fires. Oak species often recover from fire by epicormic sprouting from stems, or basal sprouting from the roots. The complex of species associated with dense oak woodlands will either resprout or germinate from seed stratified by heat or leachates from ash.

Frequent or hot fires can affect the seed bank and the root system of Oak Woodland species resulting in degraded habitat that is susceptible to habitat conversion.

Forests

San Diego County has coniferous forest communities that occur in the lower to upper montane zone in the Peninsula Ranges. The lower montane forests are typically intermixed with oak woodlands and chaparral and include the Southern Interior Cypress Forest . Upper montane forests can be intermixed with oak woodlands and chaparral, or can be pure stands of a single species to mixed conifer forests. Coniferous forest communities include Coulter Pine Forest, Jeffrey Pine Forest, and Mixed Sierran Forest

Coulter Pine Forest is typically an open to dense forest with scattered Coulter pine (*Pinus coultieri*) and black oak with a typical upper Sonoran mixed chaparral shrub layer. Tree canopy can be dense enough to exclude the shrub component. Coulter Pine Forests occur on dry rocky soils on slopes and ridges intermixing with Mixed Chaparral and lower Montane Chaparral. Common associates include a variety of manzanita species, lilac species, birch leaved mountain mahogany, and live oaks.

Bigcone Douglas-fir-Canyon Live Oak Forests typically occur in moist areas in canyons and along streams. At higher elevations, these forests occur across the broader landscape. This community develops a dense, arboreal canopy with limited understory shrubs or fuel accumulation.

Sierran Mixed Coniferous Forest occurs on the highest peaks in San Diego County and includes a variety of conifer species including white fir (*Abies concolor*), Jeffrey pine, and bigcone Douglas fir (*Pseudotsuga macrocarpa*) intermixed with canyon live oak or black oak. The shrub community includes a variety of current, lilac, and manzanita.

Jeffrey Pine Forest is a tall open forest that occurs on well-drained soils on the dry, cold sides of slopes and ridges and cold air accumulation basins. Jeffrey Pine Forests are dominated by Jeffrey pine (*Pinus jeffreyi*), with an understory of sparse Montane Chaparral or Sagebrush Scrub. Pure stands can occur on desert-facing slopes. Common associates include big sagebrush, lilac species, and manzanita species.

Southern Interior Cypress Forest consists of dense stands of Tecate cypress *(Cupressus forbesii)* which occur on steep slopes of meta-volcanic or gabbro soils. This forest type is intermixed with chamise and montane chaparral. Tecate cypress is fire-adapted but not well studied. Approximately 84% of the U.S. distribution of Tecate cypress occurs on Otay Mountain.

Montane forests are typically surrounded by chaparral or adjacent to forests subject to fire, and are therefore susceptible to fire. Coulter pine is subject to fairly frequent fires. Coulter pine has adapted to fire by having a relatively short life span (fifty to one-hundred years) and semi-serotinous cones. Coulter pine matures at around twenty-five years. When fires occur more frequently than twenty-five years, Coulter pine can fail to regenerate, resulting in habitat conversion to chaparral. Bigcone Douglas-fir/canyon live oak forests are not well adapted to withstanding frequent fire and the extant of this community type has been reduced due to crown fires over the last 90 years. Jeffrey Pine Forests and Mixed Coniferous Forests historically experienced periodic low-to-moderate intensity fires in the understory. Fire suppression has resulted in a substantial increase in the number of small diameter trees, a reduction in the number of large diameter trees, and shifts in species composition towards more white fir and incense-cedar (*Calocedrus decurrens*) and fewer Jeffrey pine, ponderosa pine (*Pinus ponderosa*), and black oak. This transition in community characteristics can result in increased risk of stand replacing crown fires due to fuel buildup.

Eucalyptus Woodland

Eucalyptus Woodland is a non-native closed canopy community that was planted by the railroads for use as rail ties. Eucalyptus Woodland is typically a monotypic stand of Eucalyptus trees (*Eucalyptus* spp.) with a

thick mulch of Eucalyptus tree leaves. Eucalyptus stands can be fire retardant to low intensity fires, but can be explosive in hot fires, or especially when trees are experiencing drought stress or the woodland has a number of dead individuals. Low intensity fires will consume the leaf litter and can be carried into the canopy where leaves are singed or tops burned. High intensity fires are typically stand destroying.

Joshua Tree Woodland

Joshua Tree Woodland can occur with a shrub or grass dominated understory. The dominant species is Joshua tree (*Uucca brevifolia*). Common associates include Mojave yucca (*Yucca schindigera*), desert needlegrass (*Achnatherum speciosa*), and big galleta (*Pleurahis rigida*). Many species of ephemeral herbs will germinate with sufficient spring rainfall. This community typically occurs on sandy, loamy, or gravelly, well-drained gentle alluvial slopes. At lower elevations this community intergrades with Mojave Creosote Bush Scrub. At higher elevations it intergrades with Mojavean Pinyon-Juniper Woodland or Semi-Desert chaparral.

Joshua Tree Woodland typically does not burn. Many of the species, including Joshua tree, will resprout after low-intensity fire. When cheatgrass establishes within a community, repeat fires can convert this community to a non-native grassland.

Chaparral

Chaparral is a highly variable plant community that occurs throughout the burn areas. Chaparral communities include Chamise Chaparral, Coastal Sage-Chaparral Scrub, Mixed Chaparral, Montane Chaparral, Semi-desert Chaparral, and Scrub Oak Chaparral. Chaparral occurs throughout the coastal lowlands, foothills, and montane region. Chaparral typically forms a dense, almost impenetrable shrub community with no herbaceous layer.

Chamise Chaparral is 1-3 meters tall and overwhelmingly dominated by chamise with a variety of associates, but none having significant cover. Associates include a variety of lilac and manzanita species. Mature Chamise Chaparral has no understory component and typically occurs on xeric slopes.

Coastal Sage-Chaparral Scrub is a mixture of drought-deciduous sage scrub species and woody chaparral species. This post fire successional community can vary, yet typically includes chamise, California sagebrush, lilac species and black sage.

Mixed Chaparral is typically divided into Northern Mixed Chaparral and Southern Mixed Chaparral. Mixed Chaparral is typically dominated by scrub oak, chamise (*Adenostoma fasciculatum*), manzanita, and California lilac (*Ceanothus* ssp.). Northern Mixed Chaparral is typically a dense, nearly impenetrable stand occurring on dry, rocky areas with little soil. Mixed Northern Chaparral can occur on north facing slopes in southern California. Southern Mixed Chaparral is not as tall or thick, with patches of bare soil, and is often intermixed with sage scrub communities.

Montane Chaparral is a dense thicket dominated by mountain whitethorn (*Ceanothus cordulatus*), bush chinquapin (*Chrysolepis sempervirens*), and various manzanita and lilac species. Mature Montane Chaparral typically has a variable canopy cover with sparse understory. Montane Chaparral typically occurs on south facing slopes in the coniferous forest zone that receives much of its annual precipitation as snow.

Scrub Oak Chaparral is a dense evergreen chaparral type that can grow up to 20 feet tall and is dominated by scrub oak and birch-leaved mountain mahogany (*Cercocarpus betuloides*). Scrub Oak Chaparral typically occurs on more mesic sites than other chaparral communities, and often at higher elevations.

Semi-Desert Chaparral is similar to Northern Mixed Chaparral, but is typically shorter and not as open. Dominant species include California Juniper (*Juniperus californica*), flat-topped buckwheat, and prickly

pear/cholla (*Opuntia* spp.). Common associates can include various species of manzanita and lilac, chamise and birch leaved mountain mahogany. Semi-Desert Chaparral intergrades with Mojavean Pinyon-Juniper Woodlands. This community typically occurs on rocky soils from 2,000 to 5,000 feet elevation.

The fire return interval for chaparral communities is typically fifty to seventy-five years (Minnich 1995, Zedler 1995), but can occur every two to three decades. Large fires often result in homogenous stands of chaparral that develop and become fire prone as a large stand, which may burn again as a large fire. After a fire, chaparral species can either resprout or germinate from heat/leachate-stratified seed in a highly variable mosaic. For a few years after a fire, annual forbs germinate and establish on site until the woody shrubs mature. Frequent fires and hot fires can burn the root system and surface seed bank resulting in loss of diversity and low-density vegetative communities.

Chamise chaparral is a fire-adapted community that stump sprouts after a low-to-moderate intensity burn. Immediately after a fire, Chamise chaparral will include a variety of native forbs that occupy the area until the chaparral matures and displaces these forbs. Semi-Desert Chaparral is less fire prone than most chaparrals in the area. Scrub Oak Chaparral communities can recover from a fire quicker than other chaparral communities.

Coastal Sage Scrub

Locally, Coastal Sage Scrub consists of low, woody soft-shrubs and is classified as Diegan Coastal Sage Scrub (DCSS). DCSS occurs below 2,500 feet and is dominated by California sagebrush (*Artemesia californica*) and/or flat-topped buckwheat (*Eriogonum fasciculatum*). DCSS inhabits low moisture sites that can be flat to steep and often intergrades with Chaparral communities. DCSS can vary in its constituents including dominance by California sagebrush, flat-topped buckwheat, and black sage (*Salvia apiana*). The understory supports a variety of herbaceous annuals and several varieties of native and non-native grasses. As its name implies, DCSS is a coastal community inhabited by a variety of species protected by state and federal law. DCSS has been reduced in area due to development, and approximately 15 percent of its former range is extant.

This vegetation community burns easily and can reburn in two to three years after a recent fire, primarily due to invasion by invasive grasses. DCSS species are fire adapted and quickly regenerate from seed after a fire. However, frequent fires (less than ten years apart) in an area can reduce the seed bank for native shrub species and increase the presence of non-native grasses and forbs resulting in degraded habitat. When degraded habitat burns, DCSS can be converted to non-native grasslands dominated by mustards and bromes. Once this habitat conversion occurs, DCSS species typically do not re-colonize the area due to competition from dense populations of invasive grasses that increase the fire frequency. Areas with moderate to highly degraded DCSS may convert to non-native grasslands due to the 2003 fires in San Diego County.

Big Sage Brush Scrub

In San Diego County, Big Sagebrush Scrub (BSS) differs from the typical BSS east of the Sierra and Cascade mountains since it includes a variety of DCSS species in place of many of the northern species found in this community type. The local BSS is dominated by big sagebrush (*Artemesia tridentate*) with flat-topped buckwheat, broom snakeweed (*Gutierrezia sarathrae*), deerweed (*Lotus scoparius*), and sawtoothed goldenbush (*Hazardia squarrosa* var. *grindelioides*). The understory supports a variety of herbaceous annuals and several varieties of native and non-native grasses.

The fire ecology of Big Sagebrush Scrub in eastern San Diego County is not well documented. Many of the associates in this community occur in DCSS and are fire adapted. Big sagebrush does experience fire in the Inter-mountain west and will reestablish at lower density following fire. A major concern with big sagebrush communities is the frequency of fire and the presence of invasive grasses, particularly cheatgrass (*Bronmus tectorum*). Cheatgrass is a winter annual that develops a deep root system (up to 1 meter) during the winter months. Once the spring temperatures rise, this root system depletes available moisture from the top meter of soil leaving germinating native species dry, resulting in high seedling mortality. Frequent fire in this vegetative community will result in habitat conversion to non-native grasslands.

Grasslands

Perennial Grasslands vary in San Diego County among Valley Needlegrass and Valley Sacaton grasslands. Valley Needlegrass Grasslands (VNG) typically occurs on fine textured clay soils and is dominated by the tussock forming purple needlegrass (*Nassella pulchra*) with a variety of native forbs including colar lupin (*Lupinus truncates*), rancher's fireweed (*Amsinckia meziesii* var. *intermedia*), and adobe popcorn-flower (*Plagiobothyrys acanthocarpus*); and the native bunchgrasses foothill needlegrass (*Nassella lepida*) and coast range melic (*Melica imperfecta*). The species composition of VNG can vary as it transitions into the foothills and montane zone. VNG often includes a variety of non-native grasses including slender wild oats, ripgut brome, and red brome.

Valley Sacaton Grasslands occur on fine textured, poorly drained, alkaline soils and are dominated by sacaton (*Sporobolus airoides*) or saltgrass (*Distichlis spicata*). This community typically occurs in areas with a high seasonal water table and is often associated with Alkali Seeps and Alkali Meadows.

Non-native Grasslands can be dense to sparsely covered communities dominated by non-native grasses such as red brome, ripgut brome and softchess brome; and can include a variety of native forbs that occur in VNG and an occasional purple needlegrass. Non-native Grasslands germinate during early winter rains and complete their life cycle by spring, then dry up during summer and fall. Non-native grasslands often intergrade with open oak woodlands and disturbed CSS communities.

Grassland communities in San Diego County have evolved with, and are typically maintained by, fire. Fire effects to perennial grasslands include reduced thatch and increased forb diversity. Fire can reduce the cover of both native and non-native grasses, opening space for germination and establishment of native forb species. Fire in non-native grasslands maintains dominance by invasive grasses and prevents establishment by native shrub species.

Meadows

Montane Meadow communities occur in the montane zone on fine texture wet or dry soils and are a dense growth of sedges and perennial herbs that experience wet cold winters. Growth begins in spring with summer flowering. Montane meadows are typically interspersed with montane forests on shallow soils.

Wildflower Field is an amorphous community of herbaceous plant species where dominance varies from site to site and year to year, depending on climatic factors. Wildflower Field typically occurs on poor soils associated with grasslands and oak woodlands in the valleys and foothills of San Diego County.

Wet meadows typically do not burn since the moisture content in the plants and soils retard fire advance. During drought times and in dry meadows fire will quickly burn through these communities. Fall fires typically have little impact on local meadows since most plants are dry and have dispersed their seed.

Riparian

Riparian communities vary depending on the aquatic system they are associated with and can have seral stages of community succession. Mulefat Scrub and Southern Willow Scrub are typically early seral stages for Southern Cottonwood-Willow Riparian Forest, which develops into Southern Coast Live Oak Riparian Forest. In steep drainages, Mulefat Scrub and Southern Willow Scrub may be early stages for Southern Sycamore-Alder Riparian Forest or White Alder Riparian Forest.

Mulefat Scrub is a tall herbaceous riparian scrub community dominated by mulefat (*Baccharis salicifolia*). Mulefat Scrub is an early seral stage along streams and rivers that frequently flood and often occurs in

association with more developed riparian seral communities. Mulefat Scrub associated plant species include sedges (*Carex* ssp.), willows (*Salix* ssp.), and stinging nettle (*Urtica holsoericea*).

Southern Willow Scrub occurs on alluvium recently deposited along stream channels during flood flows and is dominated by willow species. Scattered across the landscape are individuals of Fremont cottonwood (*Populus* fremontii), and western sycamore (*Platenus racemosa*). This community can be an early seral stage, or the next stage in succession from Mulefat Scrub.

Southern Cottonwood-Willow Riparian Forest (SCWRF) is a tall, open upper canopy to dense shrub canopy, winter deciduous forest that occurs along perennial/seasonal streams on alluvial terraces. SCWRF is dominated by Fremont's cottonwood, and a variety of willows. Included in the overstory of this community can be white alder and poison oak. The ground cover is similar to Southern Coast Live Oak Riparian Forest.

Southern Coast Live Oak Riparian Forest (SCLORF) is an open to dense evergreen riparian woodland that occurs on moist to saturated alluvial soils adjacent to ponds or streams. SCLORF is dominated by coast live oak with white alder (*Alnus rhombifolia*) and a variety of willows (*Salix* ssp.). The understory includes western ragweed (*Ambrosia psilostachya*), poison oak (T*oxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), and a variety of herbaceous forbs and grasses.

Southern Sycamore-Alder Riparian Woodland (SSARW) is an open winter deciduous forest that occurs along the sides of rocky streambeds and is dominated by western sycamore and white alder. The understory includes liana forms of trailing blackberry (*Rubus ursinus*) and poison oak along with stinging nettle and western ragweed.

White Alder Riparian Forest is a broad-leaved deciduous forest dominated by white alder that occurs along rapidly flowing perennial/seasonal streams with coarse bedloads. This community typically occurs along steep stream channels that are typically narrow. The upper canopy is open with a dense to open shrubby understory dominated by willows, mulefat, and California wild rose (*Rosa californica*).

Riparian communities are typically impacted by flood events where late seral stages are set back to Mulefat Scrub or Southern Willow Scrub. Flooding will destroy extant riparian communities and may deposit alluvium over root systems or wash away entire vegetated terraces. Riparian communities often resist fire since riparian species do not experience drought. During drought, riparian species become more susceptible to fire. Stand destroying fires can assimilate flooding events in that they set communities back to early seral stages. Stump sprouting species, like oaks, can reestablish in the early successional communities. Most mature trees that experience high intensity fires will die.

Wetlands

Wetlands in San Diego County are highly variable. The communities listed above under Riparian can also establish on hydric soils in areas with sufficient hydrology to be considered wetlands. In addition, emergent wetlands occur along seeps and as emergent wetlands in shallow water. These wetlands include Alkali Seep, Freshwater Seep and Freshwater Marsh. Wet meadows discussed above are often defined as wetlands.

Alkali Seep communities occur on permanently moist or wet alkaline seeps and consist of low-growing perennial herbs. Alkali Seeps are often dominated by saltgrass with a variety of herbaceous subshrubs including alkali heath (*Frankenia salina*), alkali mallow (*Malvella leprosa*), and alkali weed (*Cressa truxillensis*). Alkali Seeps are often associated with Alkali Meadows.

Freshwater Marsh typically occurs adjacent to Freshwater Seep and aquatic systems such as lakes, ponds, and streams. Freshwater Marsh is typically permanently flooded by fresh water. Freshwater Marshes are dominated by sedges (*Carex* ssp.), rushes (*Juncus* ssp.), and cattails (*Typha* ssp.).

Freshwater Seep communities occur in permanently moist or wet soils fed by freshwater seeps and are often associated with marshes and wet meadows. Freshwater Seeps are dominated by perennial herbaceous plant

species including graminoids that can completely cover the soil. Dominant species include sedges and rushes.

Wetlands typically do not experience fire. Fire impacts to wetlands in San Diego County are historically undocumented. Many wetland species are rhizomous and will likely survive fires. Woody species in scrub and forested wetlands may recover from fire by epicormic sprouting from stems or basal sprouting from the roots.

Agriculture

Plants that are commonly found in the agriculture lands use type includes: tree fruit orchards, vineyards, selected crops and crop stubble, and many of the grasses and herbs found in other vegetation types.

Table 2 displays the method of re-establishment of specific species after fire.

Table 2. Key species regeneration mechanism (post-fire)

Post Fire Shrub Response		
Species	Revegetation Mechanism	General Response to Burning (low/ mod fire severity) [c]
Ceanothus (many spp.) (California lilac)	Seed [a]	+
Flannel bush Mexican flannelbush * (*Fremontodendron mexicanum*)	Seed [a]	+
Rockrose (*Helianthemum scoparium*)	Seed [a]	+
Deerweed (*Lotus scoparius*)	Seed [a]	+
Bush mallow (*Malacothamnus fasciculatus*)	Seed [a]	+
Lemonadeberry (*Rhus integrifolia*)	Seed [a]	+
Sugarbush (*Rhus ovata*)	Seed [a]	+
White sage (*Salvia apiana*)	Seed [a]	+
Coastal sagebrush (*Artemesia californica*)	Seed [b]	+
Flannel bush (*Fremontodendron californicum*)	Seed [b]	+
Black sage (*Salvia mellifera*)	Seed [b]	+
Poison oak (*Toxicodendron diversilobum*)	Seed [b]	+
Golden yarrow (Eriophyllum confertiflorum)	Seed [b]	+
Yerba santa *(Eriodictyon crassifolium*)	Seed [b]	+

Virgin's bower (*Clematis lasiantha*)	Seed [b]	+
Scrub oaks (Quercus berberidifolia, Q.dumosa)	Sprout	+
Toyon (*Heteromeles arbutifolia*)	Sprout	+
Hollyleaf cherry (*Prunus ilicifolia ilicifolia*)	Sprout	+
Buckthorn (*Rhamnus* spp)	Sprout	+
Manzanita (*Arctostaphylos spp*.) Del Mar manzanita *	Sprout/Seed [b]	+
Laurel sumac (*Malosma laurina*)	Sprout/Seed [a]	+
Skunk bush *(Rhus trilobata)*	Sprout/Seed	+
Chamise *(Adenostoma fasciculatum*)	Sprout/Seed [b]	+/-

* Species listed under the Endangered Species Act

[a] Heat stratification
[b] Charate stratification

[c] Note: plants that regenerate from seed may be stimulated to germinate by low severity fire, but may not regenerate following high severity fire, if the soil organic matter/ seed bank is destroyed.

Management Direction

Resource management direction for federal and tribal lands held in trust by the Federal Government that were impacted by the fire is summarized as follows:

The majority of BLM-CDD lands impacted by the fire are addressed under the 1992 South Coast Resource Management Plan, which includes the following management goals pertinent to this ESR plan.

1. Maintain the productivity of the vegetative resource while meeting the consumptive needs of wildlife, livestock, and man. Provide for such uses under the principles of sustained yield.
2. Manage those plant species on the Federal and State lists of Threatened and Endangered (T&E) species and their habitats so that the continued existence of each is not jeopardized. Stabilize and, where possible, improve populations through management and recovery plans developed and implemented cooperatively with the U.S. Fish and Wildlife Service (FWS) and the CA-DFG.
3. Manage those plant species officially designated as sensitive by the BLM for California and their habitats so that the potential for Federal or State listing is minimized. Include consideration of sensitive species habitats in all decisions such that impacts are avoided, mitigated, or compensated.
4. Manage T&E species consistent with the framework Multiple Species Conservation Plan (MSCP) guidelines. These guidelines specifically prioritize invasive exotics control/removal and protection/restoration of critical native communities.
5. Manage wetland and riparian areas with the following specific objectives:
    a) To avoid the long-term and short-term impacts associated with the destruction, loss, or degradation of wetland and riparian areas;
    b) To preserve and enhance the natural and beneficial values of wetland and riparian areas which may include constraining or excluding those uses that cause significant long-term ecological damage;

c) To include practical measures to minimize harm in all actions causing adverse impacts on wetlands and riparian areas.

6. Accomplish the objectives of other resources by altering plant composition, density, and cover. Objectives include eliminating harmful or noxious plants, increasing livestock or wildlife forage production, and improving wildlife habitat characteristics. Diversified, native plant communities are favored over monocultures or communities based on non-native species.

The plan specifically provides for vegetation management by utilizing spot chemical application in moderate and intensive use areas after site-specific planning. Noxious weed eradication may be allowed in limited use areas after site-specific planning.

BLM Manual Handbook– 1745-1 also provides direction in the usage of native plant materials in California to re-vegetate and restore lands that will not naturally regenerate with native plants.

Also providing direction for non-native invasive plant species control in the Otay Fire area is the Otay River Watershed Tamarisk and Giant Reed Control Program, a plan covering invasive species control for multiple land-ownership jurisdictions in the 145 square mile Otay River watershed. The BLM and Jamul Band of Kumeyaay Indians have ownerships, which are covered, within this watershed.

Minimal planning or management direction documents cover the resources damaged or destroyed by the fires on reservation trust lands. Timber resources that may have been affected are not addressed within approved forest management plans. The only document in place that provides any direction for trust lands is the Southern California Agency Fire Management Plan (FMP) of 2000. This document provides broad overall guidance and policy for fire management on reservation lands within the fire boundaries. This FMP conforms to requirements of IAM Part 90 and DM Part 620, and serves as a guide and reference document for Tribal, Agency, and Regional BIA staff in fire planning, occurrence and management goals and objectives. The regulations stated cover the development of ESR plans and specifications for recovery of fire effects and impacts.

Invasive Species

Many non-native invasive plants are widespread throughout this sub-region of the state. The California Exotic Pest Plant Council (CalEPPC) lists the most problematic invasive plant species in the State. Within the burn units, the most invasive wildland pest plants: from the "widespread" CalEPPC List A-1 that occur within the burn areas include giant reed (*Arundo donax*), cheat grass, iceplant (*Carpobrotus edulis*), pampas grass (*Cortaderia selloana*), artichoke thistle, (*Cynara cardunculus*), sweet fennel (*Foeniculum vulgare*), fountain grass (*Pennisetum setaceum*), perennial pepperweed (*Lepidium* latifolium), and tamarisk (*Tamarix* ssp.). Within the burn area, the most invasive wildland pest plants that occur from the "regional" CalEPPC List A-2 list include tree of heaven (*Ailanthus altissima*) and red brome. Within the burn areas, wildland pest plants of lesser invasiveness (CalEPPC List B) include black mustard (*Brassica nigra*), tocalote (*Centqaurea melitensis*), iceplant (*Mesembryanthemum crystallinum*), and Peruvian pepper tree (*Schinus molle*). Within the burn areas annual grasses (CalEPPC) include slender wild oat, wild oat (*Avena fatua*), ripgut brome, and Italian ryegrass (*Lolium multiflorum*). Locally, filaree (*Erodium* ssp.) can be problematic in degraded areas.

Reducing effects from invasive plant species to listed species and their habitat within the burned areas is discussed as follows. In areas where the endangered Quino checkerspot butterfly occur, the most direct threats are from the bromes, filaree, artichoke thistle, sweet fennel, black mustard, tocolate, the wild oats, and Italian ryegrass. These species are also problematic in native grasslands and frequently burned shrub, woodland, and forest communities. When habitat type conversion occur in upland communities, dominance by these species usually occurs. Within riparian and wetland communities, giant reed, pampas grass, and tamarisk can be problematic.

Threatened & Endangered and Sensitive Plants

Lists of T & E plant species potentially affected by the fires or suppression activities were obtained on November 3, 2003 from U.S. Fish and Wildlife Service (FWS), Carlsbad Office. The lists were reviewed and concurred with by USFWS, BIA and BLM agency representatives for accuracy and to determine which species may occur within the fire areas.

Table 3 shows federally listed species that occur, or have habitat within or immediately downstream of the fire area. Table 4 shows sensitive species that are managed by the Bureau of Land Management consistent with an interagency Multiple Species Conservation Plan (MSCP). These species are not federally listed, but are managed according to similar resource conservation protocols so as to not further jeopardize the species and to assist with species recovery.

White sage is considered by tribal members of the San Manuel Indian Reservation to be of primary importance for cultural/ ceremonial purposes.

At the request of the USDI BAER Team, FWS prepared a comprehensive report on T & E and sensitive plant species associated with the fires. This report is included in Appendix IV.

Table 3. Threatened & Endangered Plants Known within the 2003 Southern California Fires

California Orcutt grass (*Orcuttia californica*)	Endangered
Encinitas baccharis (*Baccharis vanessae*)	Threatened
Gambel's watercress (*Rorippa gambelii*)	Endangered
San Bernardino bluegrass (*Poa atropurea*)	Endangered
San Diego button-celery (*Eryngium aristulatum var. parishii*)	Endangered
San Diego mesa mint (*Pogogyne abramsii*)	Endangered
San Diego thornmint (*Acanthomintha ilicifolia*)	Threatened
Spreading navarretia (*Navarretia fossalis*)	Threatened
Willowy monardella (*Monardella linoides ssp. viminea*)	Endangered
Mexican flannelbush (*Fremontodendron mexicanum*)	Endangered
Otay Mesa mint (*Pogogyne nudiuscula*)	Endangered
Otay tarplant (*Deinandra conjugens*)	Endangered

Table 4. Sensitive Plants Known within the 2003 Southern California Fires

Tecate cypress (*Cupressus forbesii*)	Sensitive (MSCP)
Dunn's Mariposa lily (*Calochortus dunnii*)	Sensitive (MSCP)
Gander's pitcher sage (*Lepechinia ganderi*)	Sensitive (MSCP)
Narrow-leaved nightshade (*Solanum tenuilobatum*)	Sensitive (MSCP)
Otay manzanita (*Arctostaphylos otayensis*)	Sensitive (MSCP)
San Diego barrel cactus (*Ferocactus viridescens*)	Sensitive (MSCP)
San Diego goldenstar (*Muilla clevelandii*)	Sensitive (MSCP)
San Miguel savory (*Satureja chandleri*)	Sensitive (MSCP)
Variegated dudleya (*Dudleya variegata*)	Sensitive (MSCP)
Parry's tetracoccus (*Tetracoccus dioicus*)	Sensitive (MSCP)
Felt-leaved monardella (*Monardella hypoleuca ssp.lanata*)	Sensitive (MSCP)
White sage (*Salvia apiana*)	Sensitive Cultural (San Manuel Indian Reservation)

Range Resources

Consultation with staff from BIA-SCA, and BLM-CDD was conducted on range management issues. No grazing allotments occur within the fire areas on BLM lands or on tribal trust lands under the jurisdiction of BIA. Grazing does occur on fee lands (non-trust) within some reservations, but the BIA is not responsible for management of these lands. Feral livestock and horses do utilize the burned areas, but this use is undocumented.

B. Reconnaissance Methodology and Results

When the BAER team arrived, meetings were held with local agency staff to identify issues and determine the focus for conducting resource assessment. Information on vegetation, invasive plants, possible seeding strategies, and other resources was obtained from specialists from BLM-CDD, CA-DFG, FS-CNF, BIA-SCA, FWS and NRCS-EFO.

Reconnaissance of impacted areas was conducted utilizing remote sensing, aerial survey and field visits. Due to the size of the fire and limited timeframe available for ESR plan completion, only a limited ground survey was conducted. Ground surveys were undertaken to refine and calibrate aerial survey data, map and document vegetation losses and survival, and determine fire effects to vegetation and wildlife browse. Ground reconnaissance included traversing affected areas, hiking to remote areas, and recording observations on plant community types, species composition, burn mortality on vegetation, topographic features, noxious weed species, range improvements, and suppression damage. Ground survey observations were compared with data obtained from the BAER watershed specialists to correlate burn with vegetation mortality. The vegetation specialist also visited recent burned areas adjacent to the Cedar and Otay fires to observe post-fire response.

The vegetation database that was mapped for the Cedar, Paradise and Otay fires came from the San Diego Regional Planning Agency. Data originated from the Mohave Desert Ecosystem Program (GAP Analysis), a joint project with the Departments of the Interior and Defense Legacy Program. This mapping scheme broke out the vegetation types into further delineated vegetation types based on dominance. It utilized Holland's Descriptions for classification suggested by Thomas Oberbauuer (Feb. 1993). In addition it utilized vegetation descriptions detailed in "A Manual of California Vegetation" (Sawyer and Wolf, 1995). The vegetation database that was mapped for the Old fire was obtained from USFS-CNF.

C. Findings

Vegetation Mortality

The degree of fire-related mortality was determined by aerial and on-the-ground reconnaissance. Chaparral, woodlands and forests, grasslands and riparian areas within the burns were classified into four mortality levels; low, moderate low, moderate high and high severity. Low severity is classified as less than 25% mortality (including un-burned). Moderate low is between 26% and 50% mortality. Moderate high is classified as between 51% and 75% mortality and high is classified as greater than 76% mortality. For the purposes of this assessment, vegetation mortality refers to immediate post fire mortality of the above-soil plant parts. It does not imply that the vegetation will not re-leaf or re-sprout from root crowns or epicormic plant parts. Long-term mortality or recovery will occur according to specific plant physiological characteristics, degree of injury, climatic conditions and the presence or absence of other post-fire damaging agents such as animals and insects. Tables 5.1 - 5.4 displays the immediate post-fire vegetation mortality by ownership, according to observations noted by BAER Team vegetation specialists.

Grasslands

Grasslands will regenerate quickly from existing seed sources or from seed transported by the wind. Invasive, non-indigenous species are most likely to increase on this type and will need to be monitored. All grasses and forbs will take advantage of an increase in sunlight and water. This slow modification of plant composition reduces the available area and moisture for annual or perennial grasses and forbs. On most sites herbaceous plants are primarily alien annual grasses that have naturalized to the site.

Developed/ Agriculture
Most vegetation burned on the agriculture type will be replaced with alien grasses and forbs until shrubs slowly invade from the edge of fields, or orchards are re-planted. Invasion by brush would be slow in plowed fields.

Chaparral and Coastal Sage-Scrub
In the chaparral and coastal sage-scrub types, most surface vegetation has been killed and consumed by the fire. Though most or all the vegetation has been removed, the duration of the heat was short in most areas, which allowed some buried seed to survive. In these areas, plants will return quickly from stored seed in the soil that was scarified by the fire. Heat and smoke can increase seed and plant vigor for some seeds (Blank, 1998). Some species will regenerate through basal sprouting from surviving rootstocks. Fire effects observations were stratified by chaparral community classification.

Chamise chaparral – This community is composed of low-density shrubs on xeric slopes. Chamise is the dominant shrub type. Soil burn severity is generally low to moderate and soil organic matter has not been totally consumed by fire, indicating sufficient live seed banks and rootstocks. Chamise will regenerate by resprouting from the root crown.

Coastal Sage-Chaparral Scrub - This community is composed of low-density shrubs on xeric slopes. Dominant shrubs are mixed. Soil burn severity is generally low to moderate and soil organic matter has not been totally consumed by fire, indicating sufficient live seed banks and rootstocks. Chamise will regenerate by sprouting from the root crown. Sage species will regenerate from seed where soil seed banks remain viable. Perennial grasses will sprout from live rootstocks and regenerate from seed.

Mixed Chaparral - This community is composed of high-density shrubs dominated by manzanita species, chamise, California lilac, and scrub oaks. Soil burn severity is generally a mosaic of moderate to high, with patches where soil organic matter has been totally consumed by fire. Live seed banks and rootstocks are present in the moderately burned areas, while much of the seed bank has been consumed within the high severity burned areas. Post-fire response will likely be mixed according to local shrub species composition and burn patterns. Shrubs that regenerate by sprouting will likely re-sprout, even within the high severity burned areas. The vegetation specialists examined post-fire response in these community types on the adjacent Pines Fire, that burned approximately one year prior. Scrub oak and one manzanita species exhibited strong sprouting response. Most manzanita species do not sprout, but regenerate only from seed. These species may be removed from locations that experienced high burn severity. One high intensity burned area on the Paradise Fire occurred in this type and is proposed for aerial seeding, due to probable slow re-vegetation response.

Montane Chaparral – This community is similar to the mixed chaparral type, but occupies more mesic sites. Response will be similar to the mixed chaparral type. Localized areas that burned at high severity may re-vegetate slowly if the dominant shrub species do not regenerate by sprouting.

Scrub Oak Chaparral - This community is similar to the mixed chaparral type, but occupies higher elevation more mesic sites. Response will be similar to the montane chaparral type, but more rapid due to the dominance of scrub oak, which sprouts vigorously following both high and low severity burns.

Riparian (Non-Forest) – There is scant published literature on fire effects in local riparian communities. Based upon observations from other locations, fire seldom results in mortality of riparian roots, forbs, tubers, bulbs and other below-soil plant parts due to soil moisture protection from heat. Also for this reason, soil burn severity seldom reaches high levels. It is presumed that most non-woody riparian vegetation will re-spout rapidly post-fire.

Forests and Woodlands

Numerous factors influence post-fire tree mortality, including: species characteristics, season the damage occurred, pre-fire tree vigor/site quality, extent of crown damage, extent of cambium damage, post-fire stand density/competition, post-fire climatic conditions, and insect/disease damage.

General Fire Effects:

Species Adaptations
Individual tree species have different adaptations to fire:

Live Oak Woodland Types: Most of the area burned with a low or moderate fire severity. Field reconnaissance revealed that most trees experienced greater than 50% crown scorching. This was most likely due to moderate fuel loadings under coast live oak and canyon live oak stands. Post-fire oak survival is related to fire intensity/duration, pre-fire vigor, and extent of crown/cambial damage (Plumb 1980). Susceptibility to top-kill is generally related to bark thickness (Plumb and Gomez 1983). Coast live oak is relatively thick-barked and highly resistant to fire—the most resistant local oak species -- withstanding 100% defoliation, as long as buds not killed (Paysen, pers. com.). According to Jon Keeley (pers. com.), above-ground survival is likely unless small branchlets are consumed by fire. Almost all oak species sprout after fire, if root crown or under-ground portions are still alive (Plumb 1980).

Dagit (1995) reports almost complete (97%) short-term (6-mo.) post-fire survival of coast live oak following a "high intensity" November fire. Damage varied as a result of stand spatial distribution, surrounding fuel load, and topography. Crown damage varied from light (some green foliage), to moderate (100% crown scorch), to severe (charred trunk/scaffold branches with small branchlets/twigs consumed). Almost all sprouting was epicormic (on stems within crown) versus basal (from root collar). Re-sprouting/re-growth occurred at different rates, depending upon severity of damage and size of tree. Those trees with light/moderate crown damage (scorched leaves still attached) responded almost immediately (within weeks), while more severely damaged trees took several months. Larger trees took longer to re-sprout. Long-term survival was evaluated at another site and found to be 81% 15 years following fire.

Eucalyptus Woodland: Most eucalyptus in their native habitats have evolved with periodic fire. While bluegum eucalyptus (*Eucalyptus globulus*) is highly flammable, it is seldom killed by fire. Adaptations to fire include thick bark, epicormic and basal (from adventitious-bud root crown) sprouting, seed-banking, and heat-resistant seed capsules. Unless reduced by repeated fire damage, bark protects dormant branch buds, which re-sprout following fire. This occurs in trees crown-scorched and those whose foliage consumed by crown fire. Repeated fire, can reduce bark thickness, however, resulting in top-kill or tree mortality.

Riparian Obligate Hardwood Forests: Some riparian hardwood species such as Fremont cottonwood cannot tolerate fire damage to the cambium. All cottonwood trees with greater than 25% cambium mortality will likely die. Surviving wounded trees will likely succumb in the near future due to the introduction of stem diseases. Sycamore and alder trees have thin bark and are readily top-killed by fire. Both species will re-sprout from the root crown following top-kill. However, shallow roots are a contributing factor to mortality in sycamore.

Montane Conifer types: Some conifer species, such as Jeffrey pine, are highly adapted to frequent low/moderate intensity fires Others, such as Coulter pine, take advantage of fire to enhance delayed seed dispersal from mature cones. And, some, such as Tecate cypress, have serotinus (delayed opening) cones which are totally dependent upon fire for cone opening/seed release. In latter case, parent tree is almost always killed by crown fire, however.

Season

Conifers are most susceptible to fire damage early in the growing season because retention of sufficient green foliage is necessary to carry the tree through the remainder of the growing season and provide some food reserves for the following year (Wagener 1961). If the fire occurs just as buds are beginning to elongate, even moderate levels of crown scorch can be expected to have serious effects on tree vigor and mortality levels. Fires that occur after bud-set have much less impact on tree survival.

Tree Vigor/ Site Quality

Younger, more vigorous trees on good sites have a better chance of survival than over-mature trees on poor sites (Wagener 1961). Disease has a significant effect on pre-fire vigor.

Crown Damage

The amount of live crown remaining, as distinguished from green foliage, is the most important single factor in survival of fire-scorched ponderosa and Jeffrey pines. Green needle bases indicate that the surrounding parts of the crown are still alive; conversely, darkened needles and needles "frozen" in position in the direction of fire-run are unmistakable indicators the surrounding crown is dead. The minimum criteria for survival of vigorous ponderosa/Jeffrey pine following late season (after August 1) fires with no or light cambium injury are 50 % live crown and 10% green foliage (Wagener 1961). The minimum green foliage requirement increases to 15-25% for moderately vigorous trees or those growing on poor site.

Cambium Damage

Ryan (1990) reported that, in the absence of significant crown injury, most trees survive up to 25 percent basal girdling, whereas few survive more than 75 percent.

Post-Fire Stand Density and Competing Plants

Potter and Foxx (1979) reported decreased recovery as stand density increased in ponderosa pine. Another contributing factor cited for poor recovery was competition from seeded grass.

Drought

Extended drought, such as the San Diego area has experienced three out of the last four winters (1999-02) also affects survival after a fire. Drought-stressed trees may not survive fire damage as readily as in “normal” precipitation years.

Tree Hazards

The Paradise, Cedar, and Old fires impacted the residential areas of San Pasqual, Rincon, Barona, Viejas, Inaja, and San Manuel Indian reservations. These sites experienced fire of sufficient intensity to incur significant tree damage and/or mortality. Those severely structurally-damaged trees pose an immediate threat. Others, killed or weakened by fire, will become hazards, as branches, boles, and roots of dead (and weakened trees which will die) begin to deteriorate. Unless mitigated, fire-damaged or killed trees adjacent to homes, roadways and surrounding areas frequented by residents, agency personnel and public will pose a long-term threat to public safety and/or property.

Concerns were expressed by the BIA-SCA regarding tree hazards adjacent to burned and unburned home sites and along system roads especially within the San Pasqual, Rincon, and Barona Indian reservation lands. Evaluation of tree hazards in/around residential sites by BAER foresters was completed at San Pasqual residential area, and is in progress at Barona residential area as of 11/14/03. Other locations remain to be surveyed. There was insufficient time/personnel available for BAER Team to complete evaluations at other residential areas and along road corridors. This surveillance remains to be completed by BIA/Tribal personnel or licensed arborists familiar with tree hazard evaluation/fire effects.

Short-term (6 months) and intermediate-term (6 months-3 years) fire-damaged tree hazards posing threats to tribal members, agency personnel, general public, and/or structures were evaluated using criteria contained in the National Park Service (NPS) Tree Hazard Rating system Tree hazards recommended for mitigation (removal) were designated with orange paint dots, and “Danger” or “Killer Tree” labeled orange flagging.

Additional tree hazards, especially along roads, currently exist and will need to be evaluated by a qualified arborist or forester familiar with tree hazard evaluation and fire effects on local species. Heart rot is common, especially in oaks, weakening stems and branches. Many of these rotten cavities burned and have been expanded in size, thus increasing the hazard. The National Park Service Tree Hazard or other similar rating system should be used to provide consistency and to insure that dual criteria of defect **and** target exist. Emphasis should be placed on both existing and future (rebuilt) residential sites. Maximum potential (versus current) tree hazard priority rating should be the basis for removal recommendations. Restraint should be exercised, however, in recommending removal of coast live oaks and eucalyptus, as both species are very resilient in recovering from effects (defoliation) of fire. Unless structurally damaged, or bark severely charred/totally consumed, it is recommended that decision to remove either of these species be deferred 1-2 years to allow trees to recover.

In addition, through time (3-5 years), trees that have been killed by fire will decay and will become high priority tree hazards. These long-term hazards will need to be identified and mitigated. Fast growing trees such as cottonwoods will decay faster than slower growing species such as California sycamore and oaks, and will become hazardous more quickly.

Table 4. Tree hazards identified by BAER foresters within Paradise, Cedar, and Old Fires on San Pasqual, Rincon, Barona, Viejas, Inaja, and San Manuel Tribal lands

			REMOVE			
Jurisdiction			Size (Dbh)			
	0-12"	14-24"	26-36"	38-48"	50+"	TOTALS
San Pasqual (SPR)*	188	49	15	4	1	257
Rincon (RIN)*	n/a	n/a	n/a	n/a	n/a	n/a
Barona. (BAR)**	n/a	n/a	n/a	n/a	n/a	n/a
Viejas (VIE)**	n/a	n/a	n/a	n/a	n/a	n/a
Inaja (INA)**	n/a	n/a	n/a	n/a	n/a	n/a
San Manuel (SMA)***	n/a	n/a	n/a	n/a	n/a	n/a
TOTALS	188	49	15	4	1	257
			PRUNE			
Jurisdiction			Size (Dbh)			
	0-12"	14-24"	26-36"	38-48"	50+"	TOTALS
San Pasqual (SPR)*	2	2	3	0	0	7
Rincon (RIN)*	n/a	n/a	n/a	n/a	n/a	n/a
Barona. (BAR)**	n/a	n/a	n/a	n/a	n/a	n/a
Viejas (VIE)**	n/a	n/a	n/a	n/a	n/a	n/a
Inaja (INA)	n/a	n/a	n/a	n/a	n/a	n/a
San Manuel (SMA)***	n/a	n/a	n/a	n/a	n/a	n/a
TOTALS	2	2	3	0	0	7

Table 5.1. Acres and Percent of Area of Major Vegetation Types by Mortality Class (Cedar Fire).

Vegetation Group	MORTALITY	BLM	BIA Captain Grand	Cuyapaipe	Inaja	Santa Ysabel	Sycuan	Viejas	Barona	FWS	U
Agriculture	0-25%	0							354	30	
	26-50%										
	76%+								549		
Chaparral	0-25%		4					5			
	26-50%	0	64		1						
	51-75%		40								
	76%+	3270	10950	2	221	0		330	3928	151	
Coastal Sage Scrub	0-25%										
	26-50%										
	76%+	644	2408		70	3	12		308	36	
Coastal Sage/	26-50%										
Chaparral Scrub	76%+	591	612					59			
Developed	0-25%	3					6	2	134		
	26-50%										
	51-75%										
	76%+	3	3	3	0			36			
Disturbed	0-25%	0							32		
Eucalyptus Woodland	26-50%										
	76%+								23		
Forest	0-25%										
	26-50%	4			39						
	51-75%										
	76%+	89	32		347	46					
Grasslands/Meadows/	0-25%							29			
Vernal pools	26-50%				35						
	51-75%										
	76%+	0	23		17	4		769	321	96	
Open Water	0-25%										
	26-50%										
	76%+		1								

Riparian	0-25%		7						13		
	26-50%		23								

			BIA								
Vegetation Group	MORTALITY	BLM	Captain Grand	Cuyapaipe	Inaja	Santa Ysabel	Sycuan	Viejas	Barona	FWS	U
Riparian (cont)	51-75%		39								
	76%+	33	571		4		4	50	10	19	
Scrub	76%+										
Unvegetated	0-25%								28		
	76%+										
Woodland	0-25%							5	6		
	26-50%		1						7		
	51-75%	211	137						676		
	76%+	5	690		112	0		241			
Grand Total		4852	15605	5	846	53	22	1526	6388	332	

Table 5.2. Acres and Percent of Area of Major Vegetation Types by Mortality Class (Paradise Fire).

Vegetation Group	MORTALITY	BLM	BIA San Pasqual	BIA La Jolla	BIA Rincon	Cal F&W	USFS	OTH
Agriculture	0-25%	3	30		55			2
	26-50%							
	51-75%							
	76%+	0	0		7			
Chaparral	0-25%	0	59		0			
	26-50%	51		33			97	1
	51-75%	58		199			80	
	76%+	2540	674	1024	655	300	5429	12
Coastal Sage Scrub	0-25%	0	0		0			
	26-50%	5						
	76%+	428	273		819		36	3
Coastal Sage/Chaparral Scrub	0-25%				0			
	26-50%						357	
	51-75%						174	
	76%+			5	560		1508	
Developed	0-25%	1	170		73			
	26-50%	0						
	51-75%							
	76%+	0	0		0			
Disturbed	0-25%							
	26-50%							
	76%+							
Eucalyptus Woodland	0-25%							
	76%+				5			
Forest	26-50%							
	51-75%							
	76%+	20		9			0	
Grasslands/Meadows/Vernal pools	0-25%		0		0		0	
	26-50%						3	
	51-75%						7	

	76%+		26	18	21	40	21	3
Total		3106	1232	1288	2195	340	7712	27

PARADISE FIRE: Acres of Area of Major Vegetation Types by Mortality Class and Ownership

			BIA					
Vegetation Group	MORTALITY	BLM	San Pasqual	La Jolla	Rincon	Cal F&W	USFS	OTHER
Open Water	0-25%	4					0	168
	26-50%							22
	51-75%							2
	76%+	0					1	1
Riparian	0-25%				0			45
	26-50%						4	72
	51-75%	16					0	5
	76%+	43	1	44	18	72	68	317
Unvegetated	0-25%	0						
	26-50%							1
	76%+	2						41
Woodland	0-25%	0	13		0		0	109
	26-50%	54		15			182	1430
	51-75%	63		10			122	724
	76%+	155	174	121	89	9	1407	7517
Total		337	188	190	107	81	1784	10454

Table 5.3. Acres and Percent of Area of Major Vegetation Types by Mortality Class (Otay Fire).

Vegetation Type	Vegetation Mortality	BLM	Other Federal	Other	Total Acres
Agriculture	0-25 %			1	1
	26-50 %			227	227
	76 %+	52		61	113
Chaparral	0-25 %	1763		223	1986
	26-50 %			34	34
	76 %+	8889	7	3885	12781
Coastal Sage Scrub	0-25 %	277		197	474
	26-50 %	52		301	353
	76 %+	5245	260	14766	20271
Coastal Sage/Chaparral Scrub	0-25 %	16			16
	76 %+	178		132	310
Developed	0-25 %			1	1
	26-50 %			95	95
	76 %+			110	110
Disturbed	0-25 %			15	15
	26-50 %			43	43
	76 %+	3		309	312
Eucalyptus Woodland	26-50 %				0
	76 %+			5	5
Forest	0-25 %	1673		124	1797
	76 %+	3439		453	3892
Grasslands/Meadows/Vernal pools	0-25 %			1	1
	26-50 %			58	58
	76 %+	276		764	1040
Open Water	26-50 %				0
	76 %+			8	8
Riparian	26-50 %	7		44	51
	76 %+	47		394	441
Unvegetated	26-50 %			12	12
	76 %+	4		11	15
Woodland	26-50 %			4	4
	76 %+	4		231	235
Grand Total		21925	268	22506	44699

Table 5.4. Acres and Percent of Area of Major Vegetation Types by Mortality Class (Old Fire).

Vegetation Type	MORTALITY	BLM	BIA	USFS	OTHER	Grand Total
Agriculture	0-25%				15	15
	26-50 %				7	7
Basin Sagebrush	0-25%			236	7	243
	26-50%			0		0
	(unknown)			5	1	6
Chaparral	76% +		130	22735	3186	26051
	0-25%	38		5068	1816	6922
	26-50%	2144	40	8748	8456	19388
	Water			0	34	34
	(unknown)	0		168	43	211
Coastal Sage Scrub	76% +		208	2998	620	3826
	0-25%	43	6	462	3398	3909
	26-50%	58	302	2405	3438	6203
	Water			0	13	13
	(unknown)		6	36	17	59
Developed	76% +				1	1
	0-25%			3	596	599
	26-50%		7	4	124	135
	Water				3	3
	(unknown)			0	10	10
Meadow	76% +		5	45	4	54
	0-25%			16	89	105
	26-50%		22	52	188	262
	(unknown)			0	15	15
Mixed Conifer	76% +			4171	793	4964
	0-25%			2543	467	3010
	26-50%			2031	1661	3692
	Water				3	3
	(unknown)			107	71	178
Pine Forest	76% +			388		388
	0-25%			753		753
	26-50%			217		217
	(unknown)			8		8
Riparian	76% +		1	265	66	332
	0-25%			3	57	60
	26-50%		4	176	212	392
	(unknown)			0		0
Unvegetated	76% +		5	80	107	192
	0-25%	0	1	25	244	270
	26-50%	28	5	82	399	514
	Water				26	26
	(unknown)			3	10	13
Water	76% +			4	48	52
	0-25%			1	16	17

	26-50%				8	8
	Water			1	844	845
	(unknown)				1	1

OLD FIRE (CONT)

Vegetation Group	MORTALITY	BLM	BIA	USFS	OTHER	Grand Total
Woodland	76% +			2600	424	3024
	0-25%			676	329	1005
	26-50%	30		920	1261	2211
	Water				11	11
	(unknown)	0		11	9	20
Other	76% +			1	0	1
	0-25%		0	1	20	21
	26-50%	1	0	0	103	104
	Water				0	0
	(unknown)	5	4	168	193	370
Grand Total		2347	746	58216	29464	90773

Fire Suppression Damage to Vegetation

Tables 6.1 – 6.3 displays damage to vegetation caused by dozer fire line construction within the burn perimeter. This accounts for only about a third of the dozer line constructed. The majority of fire line occurs as contingency lines outside the burn perimeter. Because complete vegetation data outside the burn area was not available, dozer fire line damage to vegetation outside the burn perimeter could not be quantified.

Vegetation is expected to recover, but over a longer period of time than the areas affected only by fire. The soil and vegetation returned to the site during rehabilitation operations does contain some seed which is expected to sprout. Rootstocks that may have survived the fire generally do not exist due to removal during line construction. For this reason, regeneration of dozer lines will take longer depending on the length and width of the dozer line and will allow a greater opportunity for invasive species to become established.

Table 6.1. Miles of Dozer Fire Line by Vegetation Type Inside Paradise Fire Perimeter. U.S. Department of Interior Lands Only (by Agency)

	Dozer line (miles) La Jolla Reservation (BIA)
Live Oak Woodlands	4.6
Forests	0.7
Chaparral	17.4
Coastal Sage-Scrub	1.2
Grasslands	1.7
Riparian	3.7
Agriculture	0.2
TOTAL	29.5

Table 6.2. Miles of Dozer Fire Line by Vegetation Type Inside Cedar Fire Perimeter. U.S. Department of Interior Lands Only (by Agency)

		Dozer line (miles) BLM
Forests	0.2	0
Grasslands	0	0.1
TOTAL	0.2	0.1

Table 6.3. Miles of Dozer Fire Line by Vegetation Type Inside Old Fire Perimeter. U.S. Department of Interior Lands Only (by Agency)

	Dozer line (miles) BLM
Semi-desert Chaparral	1.4

There were no dozer lines constructed on Department of the Interior lands within the Otay Fire.

Non-native Invasive Species

Exotic invasive plants exist throughout the burned areas, and are widespread throughout San Diego and Riverside Counties, CA. Accordingly, it is not appropriate for the BAER emergency stabilization program to restore native ecosystems that were severely degraded prior to the wildfire. The BAER Team vegetation specialists evaluated documented pre-fire invasive plant populations to determine whether they pose a threat to reestablishment of native plant communities. Those populations that are most likely to constitute a threat are recommended for immediate post-fire control. The recommendation section of this assessment contains a discussion of the treatment specifications.

Monitoring for the establishment of problematic invasive plant populations is also recommended and is supported by funding specifications. Specifications have been prepared for monitoring the following priority locations: all sites that are recommended for seeding (aerial seeding, invasive plant control seeding, dozer lines, safety zones), and all locations that are recommended for immediate invasive plant control. The BAER Team obtained maps of known invasive plant populations adjacent to the fires prior to conducting this assessment. These maps will be helpful for post-fire monitoring. Throughout the fire, agency land managers and others will accomplish less intensive monitoring during the conduct of other rehabilitation activities and normal duties. If unforeseen invasive plants become established during the emergency stabilization period (one-year from date of containment), the land management agency may prepare a plant control specification request to submit for supplemental funding.

Threatened & Endangered and Sensitive Plants

Effects to Threatened & Endangered and Sensitive Plant (TES) species were variable based on the community type and intensity of the fire in the area. TES species occur in vernal pools (a type of freshwater wetland), riparian communities, grasslands, shrublands, chaparral and cismontane forests/woodlands.

Within the Cedar Fire, TES species may have been affected in the vernal pool complexes on Marine Corps Air Station, Miramar, and in riparian communities, chaparral and cismontane woodlands (see details per species below). If vernal pool complexes burned with high intensity, TES species potentially affected by the fire include spreading navarettia, San Diego button-celery, San Diego mesa mint, and San Diego thornmint. In riparian communities, TES species potentially affected by the fire include Gambel's water cress, San Diego ambrosia, and willowy monardella. In grasslands, coastal sage scrub, chaparral and cismontane forests/woodlands, TES species potentially affected by the fire include, Encinitas baccharis, San Bernardino blue

grass, San Diego thornmint, Dunn's mariposa lily, felt-leaved monardella, and Parry's tetracoccus.

Within the Otay Fire, TES species may have been affected in grasslands, coastal sage scrub, chaparral, vernal pools, and closed cone conifer forests. Within grasslands and coastal sage scrub, TES species potentially affected by the fire include Otay tarplant, San Diego thornmint, Dunn's mariposa lily, Gander's pitcher sage, narrow-leaved nightshade, San Diego Barrel cactus, and variegated dudleya. In vernal pools, TES species potentially affected by the fire include Otay Mesa mint and San Diego thornmint. Chaparral integrades directly with closed cone conifer forests to create a unique plant community across the landscape. This community includes the following TES species; Mexican flannelbush, Dunn's mariposa lily, Gander's pitcher sage, Narrow-leaved nightshade, Otay manzanita, San Diego barrel cactus, San Diego goldenstar, San Miguel savory, Tecate cypress, and variegated dudleya.

No known TES plant occurrences were within the perimeter of the Paradise Fire. However, since the distribution of many TES species is not well known, there is the potential that TES plant species were affected by the Paradise Fire.

Encinitas Baccharis (*Baccharis vanessae*), Threatened

Encinitas baccharis is a dioecious broom-like shrub that occurs in southern maritime chaparral dominated by chamise and in dense, low growing Southern Mixed Chaparral. Encinitas baccharis occurs on Corralitos loamy sand and Cieneba rocky course sandy loam at an elevation ranging from 90 to 1,100 feet. This species is limited to a few populations in San Diego County including Encinitas, Carmel Mountain, Mt. Israel-Del Dios, 4S Ranch, Mt. Woodson-Iron Mountain, Poway and Mira Mesa. The exact fire mechanism of Encinitas baccharis is unknown, but it is thought to be fire adapted and probably enhanced by fire. Considering that it occurs in Southern Mixed Chaparral, it is most likely a fire adapted species.

Fire Effects: The Cedar Fire likely consumed populations occurring near Pine Hill in the Cleveland National Forest. Since this species occurs with a fire prone community, it should re-establish at locations where seed is present in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Gambel's water cress (*Rorippa gambelii*), Endangered

Gambel's water cress is a perennial rhizomatous herb, that blooms from April to July. It occurs in wetlands with standing water or saturated acidic soils from sea level to 1,480 feet. Gambel's water cress requires a permanent water source that can range from fresh to brackish. This species primarily occurs in populations in San Bernardino County north to San Luis Obispo County. It is known to occur on Marine Corps Air Station, Miramar in San Diego County.

Fire Effects: The western most area of the Cedar Fire likely consumed populations on Miramar. As an aquatic species, it is not likely fire resistant. However, being rhizomatous and being burned in late fall, this plant would likely be killed only when the soil is burned.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Spreading navarettia (*Navarettia fossalis*), Threatened

Spreading navarettia is an annual herb associated with vernal pools ranging in elevation from sea level to 4,300 feet. Historical distribution was from north of San Luis Obispo County south to Baja California, Mexico. The current distribution is from northwestern Los Angeles County and western Riverside County south through coastal San Diego County into Baja California, Mexico. The seed from this annual fades rapidly into the soil horizon and becomes mucilaginous when wet.

Fire Effects: The Cedar Fire likely consumed the vegetation across vernal pools within Marine Corps Air Station, Miramar. Seed left on the stalk likely burned and seed in the soil should establish during the spring.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

San Bernardino Blue Grass (*Poa atropurea*), Endangered

San Bernardino bluegrass is a dioecious, tufted perennial with creeping rhizomes. The species occurs in montane meadows in the San Bernardino Mountains, as well as in meadows in the Laguna and Palomar mountains of San Diego County at elevations ranging from 6,000 to 7,500 feet. The species occurs near the drier margins of wet marshlands. The decline of San Bernardino bluegrass can be attributed to urbanization, grazing, OHV traffic, and alteration of hydrological regimes that have destroyed, degraded, or fragmented their meadow habitat.

San Bernardino blue grass is known to occur in the area of the Laguna Indian Reservation. Since it is a perennial bunchgrass it is likely to reestablish.

Fire Effects: The Cedar Fire likely burned populations occurring within the fires perimeter in the meadows within and surrounding the Laguna Indian Reservation.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

San Diego ambrosia (*Ambrosia pumila*), Endangered

San Diego ambrosia is a clonal, perennial herb that occurs on the alluvial terraces of stream systems. This species reproduces vegetatively by rhizomes that detach from the host plant. Viable seed has not been found; therefore reproduction by seed is currently being studied. San Diego ambrosia is distributed from western Riverside County south to western Baja California, Mexico. A known population occurs on the terraces of the San Diego River.

Fire Effects: The Cedar Fire likely consumed the dry above ground stems that occur along the San Diego River. Since this species is rhizomatious and dry this time of year, individuals or colonies consumed by a surface fire likely survived. If the soil burned, those herbs within the area were likely killed.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

San Diego button-celery (*Eringium aristulatum var. parishii*), Endangered

San Diego button-celery is a perennial herb from a persistent tap-root that occurs within or immediately adjacent to vernal pools. Seed remains on the plant into the fall and early winter. It occurs at elevations from 65 to 2,100 feet from the Santa Rosa Plateau in Riverside County south to the mesas north of Ensenada, Baja California, Mexico.

Fire Effects: The Cedar Fire likely consumed aboveground stems occurring in the vernal pools that burned on Miramar. The Otay Fire likely consumed aboveground stems occurring in vernal pools within the fires perimeter. Seeds on the stalks were likely consumed by flames. Individual plants likely survived the fire since the taproot is within clay soils. Seed on the soil surface may have been consumed where fire burned the surface of vernal pools.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

San Diego mesa mint (*Pogogyne abramsii*), Endangered

San Diego mesa mint is an annual herb that occurs in vernal pools and is restricted to the coastal mesas of San Diego County ranging in elevation up to 500 feet. This species germinates with the first fall rains and flowers from May through June or July. San Diego mesa mint occurs within the vernal pool complex on Miramar.

Fire Effects: The Cedar Fire likely affected populations on Miramar. Seed left on the stalk were likely consumed where fire burned across vernal pools. Seed in the soil, left unburned, will likely become established.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

San Diego thornmint (*Acanthomintha ilicifolia*), Threatened

San Diego thornmint is a low growing annual restricted to clay soils in San Diego County south to northern Baja California, Mexico. It occurs in vernal pools, grasslands and open patches in coastal sage scrub and chaparral from the cities of Carlsbad and San Marcos in northern San Diego County east to Alpine and south to northern Baja California, Mexico. San Diego thornmint ranges in elevation from 25 to 3500 feet. This species flowers from April to May, remains erect and retains its distinct shape into the dry season.

Fire Effects: The Cedar Fire likely consumed aboveground vegetation of San Diego thornmint occurring within the fires perimeter. Known populations occur around the perimeter and immediately adjacent to the Viejas Indian Reservation. The mapped distribution around the reservation suggests that this species occurs within the boundaries of the reservation. Since plant surveys for this species were not conducted on the Viejas Indian Reservation prior to the fire, it is unknown whether scattered populations occur on the reservation and whether these potential populations were affected. The Otay Fire likely consumed San Diego thornmint within burned areas. Fire likely consumed seed on the stalk and on the soil surface.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Willowy monardella (*Monardella linoides ssp. viminea*), Endangered

Willowy monardella is a small shrub that persists in small isolated populations along the alluvial floodplains within the coastal mesa region. It is distributed within an area between Los Penasquitos Canyon and Mission Gorge in San Diego County south to northern Baja California, Mexico. Within Marine Corps Air Station, Miramar, a number of riparian communities where willowy monardella populations occur were consumed by fire.

Fire Effects: The Cedar and Otay Fires likely consumed populations occurring on Miramar and within the San Ysidro Mountains. How fire affects this species is unknown.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Mexican flannelbush (*Fremontodendron mexicanum*), Endangered

Mexican flannelbush was once distributed in a number of locations in San Diego County and northern Baja California, Mexico. It is a small tree or shrub that is currently known only from Cedar Canyon on Otay Mountain in southern San Diego County and at Arroyo Seco, north of San Quintin, Estado de Baja California, Mexico. It occurs in closed-cone conifer forests and southern mixed chaparral in association with metavolcanic soils at an elevation between 900 and 3,000 feet. Mexican flannelbush is fire adapted and requires heat stratification for seed to germinate. Repeat fires in short time intervals could prevent this species from maturing resulting in a depleted seed bank.

Fire Effects: The Otay Fire consumed the local population occurring in Cedar Canyon. Since this species occurs within a fire prone community and requires heat stratification for seed germination, it should re-colonize locations where seed is present in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Otay Mesa mint (*Pogogyne nudiuscula*), Endangered

Otay Mesa mint is an annual herb that blooms from May through June or early July. It occurs in vernal pools in the Otay Mesa/Otay Mountain area of southern San Diego County into northern Baja California, Mexico. Otay Mesa mint can be associated with vernal pool complexes intermixed with grasslands, chaparral, or coastal sage scrub. Fire could threaten this species if burns occur when seed is on the plant or the vernal pool complex is dry with available litter to heat the soil.

Fire Effects: The Otay Fire likely consumed aboveground vegetation occurring with the burn area. The fire likely consumed seed on stems and the soil surface. In areas where the soil burned, seed in the soil was likely burned.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Otay tarplant (*Deinandra conjugens*), Endangered

Otay tarplant is an annual herb that occurs from 80 to 1,000 feet in southern San Diego County and northern Baja California, Mexico. Otay tarplant grows on clay soils, subsoils, or lenses in association with grasslands, open coastal sage scrub and open maritime succulent scrub. Otay tarplant designated critical habitat overlaps the Otay Fire and small populations occur within the burn area. Populations of this species are maintained as the seed bank.

Fire Effects: The Otay Fire likely consumed seed left standing on plants and lying on the soil surface resulting in a reduction of available seed for the seed bank. Since this species occurs within fire prone communities, it should re-establish in locations where seed is present in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: No known locations.

Tecate cypress (*Cupressus forbesii*), Sensitive (MSCP)

Tecate cypress is a short-lived conifer tree species with serotinous cones. The species occurs in the U.S. only within the Otay Mountains and Tecate Peak of San Diego County and at isolated locations in Riverside County, CA. It grows at elevations from 1,500 to 5,000 feet. Limited populations of this species are also found in Mexico. Tecate cypress occurs on mountain slopes, ridgetops and canyon bottoms. Approximately 5,690 acres of Tecate cypress stands existed on Otay Mountain prior to this fire. Of this total acreage, 2000+ acres consisted of seedling and saplings that originated following 1997 wildfires.

Fire Effects: The Otay fire resulted in direct mortality to 3,892 acres of Tecate cypress. Mortality within the burned areas was complete and no surviving individuals remain within these burned acres. The fire will stimulate regeneration of this species. The serotinous cones have been opened by heat from the fire. Normal ecological processes should result in sufficient regeneration to maintain Tecate cypress as a forest type on Otay Mountain within the areas of pre-fire distribution. The age class structure will be homogenized. Future fires could jeopardize the viability of this population if fire returns prior to cone-bearing maturity of Tecate cypress (age 35-40).

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: 1,798 acres of seedling and saplings were unburned or burned in small mosaic patches. Due to the rapid spread and short on-site duration, the fire did not consume cypress crowns. Serotinous cones remained attached to the branches and have opened. It was observed that the soil surface is covered with cypress seeds. Successful regeneration is highly probable.

Dunn's Mariposa Lily (*Calochortus dunnii*), Sensitive (MSCP)

Dunn's mariposa lily is a perennial herb that sprouts from bulbs each spring. Dunn's mariposa lily is restricted to gabbro soils and co-occurs with a number of TES species discussed in this report. It grows in open areas on dry stony ridges, in fire-breaks and post burn sites in chaparral and pine forests from 4,900 to 5,600 feet elevation. Within the fire boundaries, Dunn's mariposa lily occurs on Otay Mountain, in Barona and Doane valleys, and in the Cuyamaca Peaks.

Fire Effects: The Cedar Fire and Otay Fire likely consumed seed left on the stalk. Since Dunn's mariposa lily is dormant this time of year, the only mortality would be to seed consumed by the surface fire. The fire should stimulate regeneration of this species. In areas where chaparral was dense and seed is resident in the soil, Dunn's mariposa lily will reestablish in patches within the burned site.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: Since the fires occurred at the end of October, this herbaceous plant was in a dormant state.

Gander's Pitcher sage (*Lepechinia ganderi*), Sensitive (MSCP)

Gander's pitcher sage is an aromatic shrub that occurs in the grasslands, coastal sage scrub, chaparral, and open pine forests on dry slopes between 2,500 to 3,500 feet elevation. It often occurs in association with a number of the TES species that occur on Otay Mountain discussed in this report. This shrub evolved in fire prone communities in southern San Diego County and northern Baja California, Mexico and will likely reestablish in the area from seed.

Fire Effects: The Otay Fire likely consumed all individuals that inhabited the areas that burned. The fire should stimulate regeneration of this species. In areas where fires have consumed the vegetation repeatedly over short time spans, this species may be reduced in distribution or eliminated from the community due to loss of seed in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Narrow-leaved Nightshade (*Solanum tenuilobatum*), Sensitive (MSCP)

Narrow-leaved nightshade is a perennial subshrub that occurs in shrubland, oak woodlands, and coniferous forests. It is infrequent in chaparral between 650 to 3,600 feet on Otay Mountain, Potrero Grade, Barrett Dam, Jamul, Lyons Valley, Silverwood and Campo.

Fire Effects: The Otay Fire likely consumed populations of narrow-leaved nightshade. Since this shrub evolved in a fire prone community, it will likely become re-established after the fire.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Otay manzanita *(Arctostaphylos otayensis)* , Sensitive (MSCP)

Otay manzanita is an erect shrub that is endemic to San Diego County. Otay manzanita is limited to gabbro and volcanic soils on Otay, San Miguel, Jamul and Guatay mountains. It occurs on dry slopes between 1,800 and 5,000 feet in elevation in the foothill, lower montane, and montane conifer zones. This shrub is an associate of a number of TES species that occur on Otay Mountain. This non-sprouting manzanita evolved in fire prone communities in southern San

Diego County and northern Baja California, Mexico and will likely re-establish in the area from seed.

Fire Effects: The fire consumed those individuals inhabiting burned areas. The fire will stimulate regeneration of this species. In areas where fires consumed the vegetation repeatedly over a short time spans, this species may be reduced in distribution or eliminated from the community due to loss of seed in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

San Diego barrel cactus (*Ferocactus viridescens*), Sensitive (MSCP)

San Diego barrel cactus is a stem succulent that grows as a true barrel on exposed, level or south-facing slopes in coastal sage scrub, valley grasslands and chaparral communities of the coastal plain. It occurs from coastal San Diego County south to near Punta San Telmo in Baja California, Mexico at between 30 and 500 feet elevation. The densest population occurs on Otay Mesa.

Fire Effects: The Otay Fire resulted in direct mortality to all individuals consumed by the fire. The fire ecology of this cactus is unknown, but many cactus that experience high intensity burns are killed.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: Four separate cactus were observed on the Otay fire. The spines were completely burned off, the cactus were a dull brown and were dead.

San Diego Goldenstar (*Muilla clevelandii*), Sensitive (MSCP)

San Diego goldenstar is an herbaceous perennial that sprouts from a corm. It occurs in valley grasslands, particularly near mima mounds and vernal pools, and is suppressed by woody shrubs. Common associates include purple needlegrass and blue-eyed grass (*Sisyrinchium bellum*). Grasslands typically endure low intensity fires that remove the thatch allowing for the growth of herbaceous forbs. San Diego goldenstar is endemic to San Diego County and northern Baja California, Mexico. Within the fire perimeters, San Diego goldenstar occurs on Marine Corp Air Station Miramar, Mira Mesa, Santee, Proctor Valley, and Marone Valley.

Fire Effects: It is unlikely that either the Cedar or Otay fires killed individuals of San Diego goldenstar, since this species is in the dormant stage with all energy stored in the corms. Seed exposed on the surface may have been consumed with the litter layer, but all seed in unburned soil should still be viable. The removal of thatch from burning should open the canopy allowing San Diego goldenstar to grow from seed under the appropriate climatic conditions.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

San Miguel Savory (*Satureja chandleri*), Sensitive (MSCP)

San Miguel savory is a shrub that is restricted to gabbro and volcanic soils in coastal sage scrub, chaparral, cismontane woodland, and valley to foothill grasslands in San Diego County and northern Baja California, Mexico. It occurs between 1,600 to 2,500 feet elevation in De Luz Heights; Barona Valley; and the San Miguel, McGinty, Jamul, and Otay mountains. This species is associated with the TES species that occur on gabbroic and volcanic substrates.

Fire Effects: The Otay Fire consumed those individuals that inhabited areas within the fire perimeter. The fire should stimulate regeneration of this species. In areas where fires have consumed the vegetation repeatedly over short time spans, this species may be reduced in distribution or eliminated from community due to loss of seed in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Variegated dudleya (*Dudleya variegata*), Sensitive (MSCP)

Variegated dudleya is a perennial herb with corm-like stems. This vernal plant is restricted to the 10 to 200 feet elevation zone in southern San Diego County and northern Baja California, Mexico. In San Diego County, variegated dudleya occurs from the San Dieguito River Valley-Lake Hodges area south to the U.S. Mexican border. Significant populations occur on Marine Corps Air Station Miramar; Otay Mesa, Dehesa, and the San Miguel and Otay mountains in openings within chamise, scrub oak, and coastal sage scrub.

Fire Effects: The Otay Fire burned the aboveground vegetation in areas consumed by the fire. Those individuals where the soil burned were likely killed.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Parry's tetracoccus (*Tetracoccus dioucus*), Sensitive (MSCP)

Parry's tertracoccus is a shrub that is restricted to gabbro soils in the chaparral and coastal sage scrub communities below 1000 feet. Parry's tetracoccus occurs in southern San Diego County

and northern Baja California, Mexico. Parry's tetracoccus is associated with the TES species that occur on Otay Mountain.

Fire Effects: The Otay Fire killed those individuals that inhabited the areas that burned. The fire should stimulate regeneration of this species. In areas where fires consumed the vegetation repeatedly over short time spans, this species may be reduced in distribution or eliminated from the community due to loss of seed in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Felt-leaved monardella (*Monardella hypoleuca ssp. lanata*), Sensitive (MSCP)

Felt-leaved monardella is a perennial herb that grows from rhizomes. It occurs between 950 and 3,300 feet in Orange and San Diego counties and into northern Baja California, Mexico. This species occurs on gabbro soils in the chaparral and cismontane woodlands in the Palomar and Laguna Mountains. As a rhizomous species, felt-leaved monardella is likely to survive fire that does not burn the soil.

Fire Effects: The Cedar Fire killed those individuals that inhabited areas that burned. Since this species is rhizomatous and occurs in fire prone communities, it should re-establish after the fire.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

White sage (*Salvia apiana*) Sensitive Cultural (San Manuel Indian Reservation)

White sage is a shrub that occurs throughout southwestern California and into northern Baja California, Mexico. It is common, in small patches, on dry slopes in coastal sage scrub, chaparral, and yellow pine forests below 5,000 feet. White sage evolved in a fire prone community and readily grows from seed.

Fire Effects: The four fires resulted in direct mortality to all individuals where it occurs within the areas that burned. The fire should stimulate regeneration of this species. In areas where fires consume the vegetation repeatedly over short time spans, this species may be reduced in distribution or eliminated from the community due to loss of seed in the seed bank.

Fire Suppression Effects: No effect, no known locations within areas impacted by suppression activities.

Emergency Rehabilitation Effects: No effect, no known locations within prescribed ESR treatment areas.

Post-Fire Observations: None.

Potential Timber/ Fuel wood Salvage

Due to limited markets and the nearest sawmill being over 250 miles away, there is no potential commercial timber salvage opportunity. There may be a possibility of firewood sales of fire-killed live oak. Due to the tenacious survival of these species, it is advisable to delay cutting of any fire-scorched live oak (except hazards and obviously dead trees) for a period of one growing season following the burn occurrence. Trees that fail to re-leaf following one growing season can be considered dead and available for salvage.

Potential Reforestation

The conifer forest stands and stringers on the Cedar and Paradise Fires were classified as moderate high or high fire mortality, meaning that greater than 50% of the trees were killed or damaged to where they are not expected to survive over the next three years. Stands with a higher component of conifers appeared to have a higher fire severity than areas with less of a conifer component. Conifer forests are scattered and access is poor. Reforestation expenditures are not recommended.

Live oaks are fire tolerant, and the majority of the stands will survive. Most mature stands of Tecate cypress were destroyed by fire, but are expected to regenerate with sufficient stocking to maintain the pre-fire extent on Otay Mountain.

Forest Health

With the extended drought over the past two years, there has been an increase in insect activity in the region. Bark beetles have killed numerous individuals and pockets of Coulter and Jeffrey pine in San Diego and Riverside Counties.

Many of the trees that survived the fire were partially damaged in the form of needle scorch or cambium kill. The damaged needles reduce the amount of photosynthesis that can take place and thus reduces the amount of sugars the tree produces for growth and system maintenance. The damaged cambium causes a reduction in efficiency of the roots in the uptake of water needed for transpiration and respiration. Both cause the tree to be weakened leaving the tree more susceptible to being attacked and killed by bark beetles. It is likely that insect activity will increase within the fire perimeter and it is possible that insect activity may move to healthy forest stands adjacent to the fire. For this reason, insect activity should be monitored.

IV. RECOMMENDATIONS

A. Fire Suppression Rehabilitation

Vegetation specialists visited old dozer lines on previous fires within and adjacent to the Paradise (Rincon community area) and Cedar fires (Pines fire area) to assess natural re-revegetation. The old dozer lines were not seeded, and permanent vegetation cover had not appreciably established. Some dozer lines had visible erosion channels, rills and invasive plants. Seeding of dozer lines, safety zones, and staging areas is recommended to reduce potential soil erosion from water and wind, limit noxious weed invasion, and provide dust abatement once plants are established. Vegetation specialists developed the specific seed mix and application techniques. The Operations Assessment section of this plan includes this information in the dozer line repair specifications.

B. Emergency Stabilization

Old Fire

No vegetation management recommended specifications for Emergency Stabilization on the Old Fire.

Otay Fire

V-3 Invasive Species Control

A specification has been prepared to control non-native invasive plants. Invasive species, along with listed California noxious weeds, will be controlled using herbicide on known weed infestations on the Otay (BLM) Fire. Control will be by spot application using a backpack sprayer with applicable herbicides on 267 acres of roadsides and around the tower sites on Otay Peak. The BLM will provide all procurement and contract administration for this project.

V-4 Invasive Species Control

A specification has been prepared to control non-native invasive plants. Invasive plant species with the potential to re-vegetate selected BLM administered lands at the mouth of Sycamore Canyon on the Otay Fire will be treated by chemical (herbicidal) control, and then seeded with a rangeland drill. The purpose is to protect the ecological integrity of native plant communities and provide competing vegetation that will prevent further spread of non-native invasive species. Approximately 250 acres are recommended for treatment. It is recommended that herbicide (Glyphosate -Round-up®) be applied by a farm tractor with boom sprayer, over invasive plant germinants during the late fall/ early winter season. Following herbicide application, the native plant seed mix will be applied by farm tractor using the no-till rangeland drill method. Approximately 3.86 lbs. pure live seed (PLS) /acre of selected native grass and shrub seed will be drilled at the rate of 25 PLS/ square foot. The BLM will provide all procurement and contract administration for this project.

The recommended seed mix includes native species that are the dominant shrubs and herbs that have been successful in projects attempting to reestablish coastal sage scrub. The combination of herbicide treatment with the species in this mix should suppress non-native invasive plants over both the short and long term. The seed mix is utilized for erosion control, slope stabilization, and ecological restoration projects throughout the county. The mix is diverse enough to create habitat for the coastal California gnatcatcher.

Cedar Fire

V-3 Invasive Species Control

A specification has been prepared to control non-native invasive plants. Invasive species (purple star thistle, *Centaurea caltrata*) will be controlled using mechanical and herbicide (clopyralid – Transline®) treatments on known weed infestations on the Cedar Fire (Viejas Reservation). Mechanical control should be implemented immediately post-fire (hand grubbing and bagging cured plants to prevent seed dispersal). Herbicide control should be initiated once germinants appear (following winter rains). This treatment will be spot application using a backpack sprayer with applicable herbicides on 82 acres, along roadsides near the Cedar Fire (East Branch ICP) and roadsides leading up to and away from the ICP.

The recommended seed mix includes native species that are the dominant shrubs and herbs that have been successful in projects attempting to reestablish coastal sage scrub. The combination of herbicide treatment with the species in this mix should suppress non-native invasive plants over both the short and long term. The seed mix is utilized for erosion control, slope stabilization, and ecological restoration projects throughout the county. The mix is diverse enough to create habitat for the coastal California gnatcatcher.

V-5 Imminent Tree Hazard Mitigation

A specification has been prepared to remove hazard trees. Trees damaged or killed by the Cedar Fire (Barona Reservation) that poses an immediate threat to life or property will be felled. These are trees that were evaluated incorporating National Park Service tree rating standards and were flagged at DBH using fluorescent orange "Killer Tree" flagging ribbon. Trees will be directionally felled away from property and roads wherever possible.

Paradise Fire

V-3 Invasive Species Control

A specification has been prepared to control non-native invasive plants. Invasive species will be controlled using herbicide on known weed infestations on the Paradise (San Pasqual Reservation) Fire. Control will be by spot application on four areas (one acre each) using a backpack sprayer with applicable herbicides. Known species to be controlled are Tamarisk (*Tamarix spp.)* and Giant Reed (*Arundo donax)*. Giant Reed should be controlled by foliar application of herbicide (Glyphosate -Round-up®) once the re-sprouts reach 2 – 3 feet in height. The treatment may be ineffective once the re-sprouts grow to a greater height, so timely application is critical. Tamarisk should be controlled by foliar application of herbicide (Garlon-4) when sprouts reach 2 – 3 feet in height. Cutting the tree and then coating the stump with herbicide is the recommended treatment for large, live tamarisk trees.

The recommended seed mix includes native species that are the dominant shrubs and herbs that have been successful in projects attempting to reestablish coastal sage scrub. The combination of herbicide treatment with the species in this mix should suppress non-native invasive plants over both the short and long term. The seed mix is utilized for erosion control, slope stabilization, and ecological restoration projects throughout the county. The mix is diverse enough to create habitat for the coastal California gnatcatcher.

V-1 Aerial Seeding

A specification has been prepared for aerial seeding. This involves aerial seeding 3,254 acres of severely burned erosive soils on Paradise Fire; Rincon Reservation (36 acres), La Jolla Reservation (414 acres), BLM administered lands (2522 acres) and associated other lands (282 acres). Erosion control is necessary since the severely burned slopes are adjacent to a mid-slope irrigation canal, the San Luis Rey River channel and eroded lands that drain into the Rincon, La Jolla and San Pasqual Reservations. These areas experienced high burn severity and vegetation mortality. Post-fire natural revegetation response is likely to be delayed due to reduced soil seed banks and rootstocks. The BIA will act as the lead agency for contract administration of this project, which will be completed as soon as possible. The seed mix will be composed of native grass and shrub species along with a fast germinating, non-invasive cereal grain (spring barley). Fixed wing aircraft is the recommended application method.

The recommended seed mix includes native species that will quickly establish cover. The annual species will provide ground cover during the growing season and then a mulch. The perennials will provide soil stabilization since their root systems can be extensive.

V-5 Imminent Tree Hazard Mitigation

A specification has been prepared to remove hazard trees. Some trees damaged or killed by the Paradise Fire (San Pasqual and Rincon Reservations) pose an immediate threat to life or property and should be felled. These trees were evaluated incorporating National Park Service tree rating standards and were flagged at breast height using fluorescent orange "Killer Tree" flagging ribbon. Trees should be directionally felled away from property and roads wherever possible.

Monitoring

Old, Otay, Cedar, and Paradise Fires

V-2 Revegetation Monitoring
A specification has been prepared to monitor rehabilitation seeding the first year following implementation to: 1) establish monitoring transects within each vegetation type or ecological site, and 2) to use publication "Measuring and Monitoring Plant Populations" for an acceptable and statistically valid technique. Monitoring will also determine if non-native invasive plant species or noxious weeds are establishing. Monitoring will occur on seeded areas, dozer lines, safety zones, and where non-native invasive species are controlled.

C. Rehabilitation

Management

Old, Otay, Cedar, and Paradise Fires

The vegetation group was primarily focused on emergency stabilization issues although long-term rehabilitation projects were considered, such as reforestation and fencing. It was determined that rehabilitation projects were not applicable under current agency management strategies. If the agencies concerned discover any long-term rehabilitation projects that are needed and that fit under the ESR rehabilitation requirements, they can request supplemental funding through the funding channels.

Monitoring

Old, Otay, Cedar, and Paradise Fires

The vegetation group discussed possible long-term rehabilitation projects but none are proposed at this moment. Therefore, long-term rehabilitation monitoring is not necessary. If the land management agencies concerned determine long-term rehabilitation projects are needed and can be funded, then monitoring may be proposed.

D. Management Recommendations (non-specification related)

BLM Lands

These fires have homogenized the vegetation structure, age and density on large landscapes. Due to the large proportion of high vegetation mortality, vast areas have been arranged such that return fire will maintain this pattern. The BLM should examine management alternatives to reduce (fragment) the continuity and homogeneity of vegetation structure, age and density throughout the landscape. For example, on Otay Mountain, the Tecate cypress population could be in jeopardy of being lost or reduced in extent, if wildfire returns prior to cone and seed bearing maturity of the stand that will originate following this fire. Other sensitive or TES species (both plant and animal) could be similarly affected. Prescribed fire use could be a management option.

The BLM should initiate timely monitoring for invasive plants across all administered lands impacted by fires. This monitoring should be conducted in addition to the emergency stabilization funded monitoring of priority areas. Timely discovery would allow for the request of supplemental BAER program funding for control. Since a large number of TES species occur on BLM lands within all of the fire perimeters, it is imperative that more intensive surveys for TES species become a priority and that locations be mapped using GPS technology in case large fire incidents that impact landscapes occur again. The regeneration of Tecate cypress from seed-fall should also be something that is monitored for success, and alternative plans be put in place in case other regeneration techniques are necessary if regeneration fails. All monitoring efforts should be coordinated with the FWS and the local MSCP agencies.

The BLM should request supplemental funding for the second year after the fires to monitor the recovery of the sensitive plant species discussed above. Species such as Mexican flannelbush have a limited distribution within the perimeter of the Otay Fire. Monitoring should include all of the MSCP covered species. Long-term monitoring should also be implemented to understand the methods that each of the TES species discussed above use to respond to fire and to understand the effects that repeat fires have on each species and the community.

Indian Reservation Trust Lands

The BIA has a trust responsibility to gain as much value as possible for damaged tribal resources. The BIA should explore selling fire killed forests and woodlands as firewood or other wood products off reservation, with the Tribe's permission, as an option to gain revenue for the tribe. Live oaks should not be harvested until after the end of the 2004 growing season. This will avoid harvest of trees that could survive. Trees that have not sufficiently re-leafed after the 2004 growing can be considered dead.

The BIA should work with the Tribes to identify and remove or contain feral livestock within Reservation Trust lands. This would permit more timely recovery of the fire-damaged vegetation. If large quantities of livestock are found, the BIA should develop a supplemental emergency stabilization specification to request funding for removal or exclusion fencing.

The BIA should initiate development of integrated natural resources management plans (IRMP's) for each Southern California Agency reservation. These plans should include forest and fire management issues where applicable.

The BIA should initiate timely monitoring for invasive plants across all reservation lands impacted by fires. This monitoring should be conducted in addition to the emergency stabilization funded monitoring of priority areas. Timely discovery may permit for the request of supplemental BAER program funding for control.

The BIA should initiate development of a programmatic invasive plants monitoring and management program, specifically for the Southern California Agency reservations. Due to the large number of TES plants in the San Diego area, monitoring for TES species and potential impacts to those species must occur on a regular basis. Monitoring could be an important part of an IRMP when developed.

Non-federal Lands

The FWS and local MSCP agencies should implement a series of monitoring programs to understand how all of the TES species reestablish within all of the fires. The diversity of habitats provides structure and function for each of the TES species that occurred within the fire perimeters. Developing a cooperative approach for the continued management of the TES

species affected by the fire should provide this team with opportunities to further develop the adaptive management program under the MSCP, develop monitoring methodologies to understand the effects and responses to fire, and develop approaches for acquiring funding to implement the adaptive management program. Adaptive management may include invasive weed control, seed propagation and out-planting, and ecological restoration of areas experiencing post fire habitat conversion.

V. CONSULTATIONS

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

CULTURAL RESOURCE ASSESSMENT

I. OBJECTIVES

- Assess potential damage to cultural resources for the purpose of recommending treatments to stabilize and rehabilitate archaeological sites, traditional cultural properties, and historic structures from adverse effects of wildland fire, suppression activities, post fire erosion, and emergency stabilization and rehabilitation projects.

- Conduct assessments necessary to meet Federal legal mandates.

- Consult with appropriate Native American tribes as necessary to meet Federal legal requirements, agency policies, and agreements.

- Avoid or mitigate adverse effects to cultural resources from emergency stabilization and rehabilitation activities.

II. ISSUES

- Investigation of known or previously documented historic and prehistoric cultural resources potentially affected by four of the 2003 Southern California Fires (Cedar, Old, Otay and Paradise), suppression activities, or proposed emergency stabilization and rehabilitation.

- Investigation of undocumented cultural resources discovered as the result of the fire or potentially affected by four of the 2003 Southern California Fires fire suppression activities, or proposed rehabilitation.

- Investigation of reservation cemeteries potentially affected by the fires, suppression activities, or proposed emergency stabilization and rehabilitation.

- Protection of cultural resource sites on Bureau of Land Management lands from Off-Road-Vehicles and looting.

III. OBSERVATIONS

Cultural History

The physical and natural environment of the fire is described in preceding and following assessments in this plan. This discussion of the four 2003 Southern California Fires prehistoric cultural history comes primarily from Cook and Fulmer (1981), Christensen (1990), and Pigniolo and Baksh (1999). The first definite occupation in this region began sometime between 8,000 to 12,000 years B.P., in a period of time termed the San Dieguito. At this time the peoples were probably generalized hunters and gatherers. Around 7,500 B.P., the artifact assemblage associated with the San Dieguito underwent a major change, signaled by the appearance of milling equipment, including manos and metates. This was also accompanied by a change in projectile point styles. This suggests a major shift in subsistence towards exploitation of a broader range of plants and animals. The coastal area of San Diego was heavily exploited during this time although inland sites are known (Tierra 2002). Variously called the Archaic Period, Milling Stone Culture or La Jolla Culture, this period lasts until around 2,000 years B.P. when Shoshonian-speaking people from the Great

Basin began migrating into Southern California. At this time projectile points became smaller indicating the introduction of bow and arrow. Ceramics (pottery) also appeared during this time. The use of inland areas and incorporation of acorn into the diet is inferred from the presence of long-term use of bedrock milling stations, as evidenced by mortar holes and grinding slicks. By at least this period of time, the ancestors of present day tribes were occupying the region, and the presence of resources, rather than elevation, appears to be the determining factor on site location.

The historic period begins when de Anza crossed through the Borrego Desert. It was the development of the California Missions and resultant contact with priests and soldiers in the early 1700's, however, that changed the Indians previous lifeways. One of the more profound changes occurred in 1793 when the Spanish began enforcing a ban on Indian burning of the native landscape (Coursen 2002, Castillo 1978). The result of this prohibition was a long-term change in native vegetation, as well as Native American diet. In 1821 Mexico gained independence from Spain, but the relationship with the Indians of the region did not improve. In fact, it was only in the latter part of the 19th century, well after California became part of the United States, that the Indian tribes regained a land base.

Moving into the Euro-American historic period, the following historic information comes primarily from Brigandi (1995), Castillo (1978), and Wray (1996). After U.S. acquisition, settlement patterns at the first part of this period are similar to the Mexican settlement with most people passing through the area rather than settling here. The cattle and sheep industry began in the 1850's and has continued to the present day in a much abbreviated form. The early stockmen practiced burning to enhance grazing, but this practice was also stopped after the turn of the century.

In 1870, gold was discovered in the region. Most mining activities were conducted in the area around Julian, however some assaying activities occurred in the Otay Fire vicinity and in a few areas of the Cedar Fire. Mining activity declined in the late 1870's, then picked up again in the late 1880's and continued over the next decade. While a renewed interest in the mines occurred during the Great Depression, the mining conducted today is primarily recreational.

> The Escondido Canal, which transfers water from Lake Wohlford to the City of Escondido, crosses the La Jolla, Rincon and San Pasqual Reservations. Construction of the dam and canal began in 1895 using manual labor and horses. In 1912, portions of the canal were lined with concrete and the entire length of the canal was concrete lined by 1924 (Dutschke n.d.). The canal is owned and operated by the San Diego County Water Department and burned portions were not considered in this assessment.

A. Background

This report documents the results of an assessment of the impacts to cultural resources arising from the 280,059 acre Cedar Fire, the 90,773 acre Old Fire, the 44,699 acre Otay Fire and the 56,427acre Paradise Fire. The Cedar Fire was human caused and began on October 25, 2003. The Old Fire ignited on October 25, 2003 and the cause is still under investigation. The Otay Fire began on October 26, 2003 and the cause is still under investigation. The Paradise Fire began on October 26, 2003 and was human caused. All four fires were driven by Santa Ana winds and some of them spread at the rate of three to four miles per hour.

Cultural resources considered in this assessment are located on Department of the Interior jurisdictions within each fire. Additional areas not under direct federal jurisdiction, including Sycamore Canyon Open Space Preserve / Goodan Ranch County Park and Hellhole Canyon Open Space Preserve, were also investigated.

The combined North and South Zone Burned Area Emergency Response (BAER) Teams began arriving in Rancho Bernardo, San Diego County on October 31, 2003. The BAER Team received an initial team briefing on November 1, 2003 at the Four Points Sheraton, Rancho Bernardo. Dan Hall and Carla Burnside, South Zone BAER Archaeologists, were briefed at this time by BLM on issues relating to cultural resources on BLM lands. Chuck James, North Zone BAER Archaeologist, arrived on November 7, 2003. Dan Hall contacted several affected tribes during the week prior to the arrival of the BAER Team and remaining contacts were made by BAER archaeologists prior to entering tribal lands. Contact with the California State Historic Preservation Office (SHPO) was initiated on November 10, 2003 after the team had an opportunity to determine what, if any cultural resources had been impacted by the fires, suppression activities, or would be subject to erosion on Federal and Tribal jurisdictions.

2003 Southern California Fires
Acres by Ownership Considered in the Cultural Resources Assessment

Cedar Fire	
Jurisdiction	Acres
Barona Reservation	6,388
Bureau of Land Management	4,854
Capitan Grande Reservation	15,604
Cuyapaipe Reservation	5
Inaja-Cosmit Reservation	846
Santa Ysabel Reservation	53
Sycuan Reservation	22
Viejas Reservation	1,526
Total Acres	29,298
Old Fire	
Bureau of Land Management	2,347
San Manuel Reservation	746
Total Acres	3,093
Otay Fire	
Bureau of Land Management	21,925
Total Acres	21,925
Paradise Fire	
Bureau of Land Management	3,442
La Jolla Reservation	1,478
Rincon Reservation	2,303
San Pasqual Reservation	1,421
Total Acres	8,644

Because of the large size and limited access to interior portions of the fires, only sites considered to be eligible for inclusion on the National Register; unevaluated sites containing midden deposits in or immediately adjacent to drainages; and sites in areas vulnerable to erosion or flooding were field checked during BAER Team reconnaissance surveys. Previously recorded historic sites were also visited if they were at risk of flooding or erosion. Concerns expressed by tribes about flooding or erosion potential at reservation cemeteries also necessitated their inspection by the team.

An aerial helicopter reconnaissance of the Cedar and Paradise fires was made on November 8, 2003. During this flight the diversity of ecological zones, major canyons, steep slopes, and limited suppression activities reinforced the team's survey methodology.

B. Reconnaissance Methodology and Results

Specific to prehistoric site sensitivity, the steep slopes of the fire areas are considered to be of low sensitivity. Drainages, lower slopes and areas near the mouths of canyons and ridgelines, however, are considered as high sensitivity. Most of the remainder of the fire areas are considered to be moderate to high sensitivity for detecting prehistoric sites. All springs and waterways are also considered favorable locations. Traditional Cultural Properties and areas sacred to the Indian Tribes may occur any place favorable resources occur or where traditional uses or religious practices dictate. Historic sites can occur anywhere on the landscape.

?? One hundred and five archaeological and historic sites are within lands burned by the fires. A review of available records (105) for presence of rock shelters, rock art, cultural depth of deposit (habitation), and historic sites with wooden elements present, allowed a determination to be made of which sites should be considered for assessment. The rationale for selecting these site types is that while the 56 bedrock milling features, lithic scatters and pot drops (pottery associated with a single vessel) can contribute limited types of archaeological information, they are not subject to further loss of significant information due to post-fire effects. This effort resulted in 49 sites considered for assessment of fire effects.

Jurisdiction	Recorded Sites	Sites Assessed	Site Treatments Recommended
Cedar Fire			
Bureau of Land Management	6	0	0
Bureau of Indian Affairs Administered Lands	32	27	0
Old Fire			
Bureau of Land Management	16	4	0
Bureau of Indian Affairs	1	1	0
Otay Fire			
Bureau of Land Management	26	2	0
Bureau of Indian Affairs	0	0	0
Paradise Fire			
Bureau of Land Management	2	0	0
Bureau of Indian Affairs	22	15	0

TOTAL	105	49	0

?? **In addition to prehistoric and historic sites, five contemporary tribal cemeteries on BIA administered lands within the fire perimeters or below burned areas were assessed for potential erosion.**

?? Surveys were initiated for watershed treatments at Sycuan and San Pasqual Reservations. One area behind the Sycuan Health clinic was assessed for the presence of cultural resources and five areas at San Pasqual were examined prior to cleanup of debris in adjacent drainages. Treatments at San Manuel Reservation were included in previous cultural resource survey areas and were not subjected to additional examination.

C. Findings

1. None of the 49 prehistoric or historic sites considered for assessment of fire effects will require stabilization treatments. Fire suppression activities and the fires did not detrimentally impact any of the 49 sites. These sites will also not be impacted by runoff events as they are located above drainages or in locations away from drainages and will not require treatment.
2. The loss of the protective vegetation cover at archaeological sites at these fires has created a situation whereby significant cultural values are at risk of looting. The region is known to have a long-term tradition of collecting and looting sites and illegal collectors are known to enter fire areas in search of high value sites and artifacts. The loss of vegetation, coupled with points of access, places significant cultural deposits at risk until the vegetation reestablishes itself.
These threats to cultural resources caused by these fires can be reduced. Closure of areas of significant cultural resources can prevent surface collection and looting until vegetative growth recovers the sites. Finally, there is a need for law enforcement to patrol for looters and enforce any closures that are made.
3. Less than one mile of suppression dozer line was constructed on the La Jolla Reservation on the north side of the Paradise Fire. The line was constructed on very steep slopes and the team determined that the slopes were beyond the grade conducive to human use.
4. Surveys initiated in advance of watershed treatments at San Pasqual and Sycuan Reservations did not locate any cultural resources within the project boundaries.
5. Two of the five cemeteries assessed by the team will require treatments to prevent erosion and flooding. Specifications C-1 and C-2 below describe these treatments.

IV. RECOMMENDATIONS

A. Fire Suppression Rehabilitation - **No Specifications Required.**

B. Emergency Stabilization

1. Management **–**

C-1 – San Manuel Cemetery Protection

Description: **Sand bags will be placed along the northern edge of the cemetery at the base of a steep slope. The sand bags will prevent erosion of cemetery plots and keep sediment flows outside of the cemetery during rain events. Water or sediment flowing off the adjacent hill slope will be diverted toward an existing drain in the cemetery. Sand bags placed along three sides of the drain will protect nearby cemetery plots if water flows exceed the capacity of the drain. The**

steep slope will be hydromulched under another specification (Part F. Specification W-4 - Hydromulch).

C-2 – Inaja Cemetery Erosion Control

Description: The purpose of this treatment is to prevent erosion of the Inaja Cemetery from high water events in the drainage adjacent to the cemetery. The sand bags will be serve as a barricade along the drainage located on the east side of the cemetery. Water overflowing the existing confines of the drainage will be diverted back into the drainage before it can reach the cemetery. The rolling crossings will allow more efficient movement of water from the vicinity of the cemetery. Water currently backs up along the side of the road before overflowing into the drainage below.

C. Rehabilitation – **No Specifications Required.**

D. Management Recommendations (non-specification related)

Barona Reservation

- ?? Clean-up of burned house in the vicinity of Site B-13 should avoid undisturbed portions of the site.
- ?? A rock art conservationist should evaluate the potential for rehabilitation of the pictograph panel that has been subject to the effects of the fire.

Tribal Lands

- ?? Close access to areas containing documented cultural resource sites for one year or longer, until significant revegetation has occurred to obscure sites from looting. This will also reduce damage from Off-Road-Vehicle traffic across sites.
- ?? An opportunity exists to conduct archaeological survey of previously undocumented areas within the fire perimeter and can confirm the accuracy of previously recorded site boundaries.

Bureau of Land Management - Palm Springs – South Coast Field Office

- ?? Close all access points within the fire perimeter of the Otay Fire for one year or longer, until significant revegetation has occurred to obscure cultural resource sites. The Project Manager should make this determination of adequate coverage.
- ?? On BLM administered lands within the Cedar, Otay, and Paradise Fires, law enforcement patrols should be increased near cultural resource sites to prevent looting.
- ?? On the Cedar, Otay, and Paradise Fires consider posting “No Vehicle” signs in the vicinity of cultural resource sites to prevent Off-Road-Vehicle traffic across sites. Signs should not refer to cultural sites in the area.
- ?? Close access to Mount Gower Open Space Preserve for one year or longer until sufficient revegetation has occurred to prevent looting of cultural resource sites and damage from Off-Road-Vehicle traffic.
- ?? Close access to El Capitan Open Space Preserve for one year or longer until sufficient revegetation has occurred to prevent looting of cultural resource sites and damage from Off-Road-Vehicle traffic.
- ?? Archaeological Resource Protection Act training should be arranged for BLM law enforcement officers, Border Patrol Officers and for County Sheriff Department personnel who are responsible for patrolling within the fire perimeters.

?? Herbicide spraying on cultural sites should be conducted without vehicles being driven across the sites and seeding should be conducted by hand.
?? Vehicles used for fence repair should not be driven across cultural sites. All fence construction within site boundaries should be conducted without the use of motorized vehicles.
?? An opportunity exists to conduct archaeological survey of previously undocumented areas within the fire perimeter.

Bureau of Land Management - Barstow Field Office

?? On BLM administered lands within the Old Fire, law enforcement patrols should be increased near cultural resource sites to prevent looting.
?? On the Old Fire consider posting “No Vehicle” signs in the vicinity of cultural resource sites to prevent Off-Road-Vehicle traffic across sites. Signs should not refer to cultural sites in the area.
?? Close access for all lands within the fire perimeter of the Old Fire for one year or longer, until significant revegetation has occurred to obscure cultural resource sites CA-SBR-173, CA-SBR-2023, CA-SBR-2041 and CA-SBR-2042. This will also reduce damage from Off-Road-Vehicle traffic across sites.
?? Archaeological Resource Protection Act training should be arranged for BLM law enforcement officers who are responsible for patrolling within the fire perimeter.
?? Vehicles used for fence repair should not be driven across cultural sites. All fence construction within site boundaries should be conducted without the use of motorized vehicles.
?? Boundaries of documented archaeological sites within the fire perimeter should be reviewed to determine their maximum extent prior to regrowth of vegetation in the area.
?? An opportunity exists to conduct archaeological survey of previously undocumented areas within the fire perimeter.

San Diego County Parks

?? Close access to Sycamore Canyon park for six months or longer until sufficient revegetation has occurred to prevent looting of cultural resource sites and damage from Off-Road-Vehicle traffic. A reversionary clause in the land patent from BLM provides authority to protect cultural resources.
?? Close access to Hellhole Canyon park for six months or longer until sufficient revegetation has occurred to prevent looting of cultural resource sites and damage from Off-Road-Vehicle traffic. A reversionary clause in the land patent from BLM provides authority to protect cultural resources.
?? Initiate Sheriff Department patrols of county parks with exposed historic and prehistoric cultural resources to deter looting.
?? An opportunity exists to conduct archaeological survey of previously undocumented areas within the fire perimeter.

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DEPARTMENT OF THE INTERIOR
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION REPORT

2003 SOUTHERN CALIFORNIA FIRE

WILDLIFE RESOURCE ASSESSMENT

I. OBJECTIVES

- **$** Assess effects of fire and suppression action to Federally listed Threatened, Endangered, and other locally rare species and their habitats on Bureau of Land Management, U. S. Fish and Wildlife Service and Tribal lands.
- **$** Conduct Section 7 Emergency Consultation with the U. S. Fish and Wildlife Service.
- **$** Determine effects of fire and suppression action to habitat improvements.
- **$** Prescribe emergency rehabilitation measures and/or monitoring.
- **$** Assess effects of proposed rehabilitation actions to listed species and habitats.

II. ISSUES

- **$** One Federally listed Threatened, three Endangered species, and critical habitat, occur within the fire areas.
- **$** Numerous locally rare species occur within the fire areas.
- **$** Impacts to these species from the fire, suppression actions, and emergency rehabilitation proposals.

III. OBSERVATIONS

The purpose of this Burn Area Emergency Rehabilitation (BAER) Wildlife Assessment is to document the effects of the fire, suppression activities, proposed rehabilitation work, potential post fire flooding and sediment delivery to all Federally listed Threatened, Endangered and culturally significant or locally rare birds, mammals, amphibians, reptiles, fish, invertebrates, and their habitat, that may occur within or downstream from the fire area. This assessment includes effects to species that occur on lands under the jurisdiction of the Bureau of Land Management California Desert District (BLM), lands held in trust by the United States government for the Santa Ysabel Band of Mission Indians, San Manuel Band of Mission Indians, Rincon Band of Mission Indians, La Jolla Band of Luiseno Indians, San Pasqual Band of Mission Indians, Barona Group of the Capitan Grande Band of Mission Indians, Inaja-Cosmit Band of Mission Indians, Viejas (Baron Long) Band of Mission Indians, Sycuan Band of Mission Indians, Ewiiaapaayp Band of Kumeyaay Indians, and Jamul Indian Village.

Separate BAER Assessments are being prepared by the Cleveland and San Bernardino National Forests (FS) to address fire affects to the national forest system lands within the Cedar, Paradise and Old Fire perimeters.

This assessment also discusses information that is included in documentation of the Emergency Section 7 Consultation for these incidents. Emergency Consultation was initiated with U. S. Fish and Wildlife Service (FWS) on October 29, 2003. The detailed consultation documentation is on file at the local offices of BLM, Bureau of Indian Affairs (BIA), and FWS.

Species addressed for these fires include all federally listed species from the current FWS lists. BLM also identified sensitive species and habitats that occur on BLM lands within the fire areas. Although many culturally significant species and habitats occur within the burned area, it was determined through discussion with BIA and Tribal representatives that assessment of fire effects to these species in relation to the Tribe's life ways and traditions was beyond the scope of this assessment.

FWS, BLM, FS, U. S. Geological Service, California Department of Fish and Game, San Diego County, and consulting biologists provided occurrence data, habitat models, designated habitat, and GIS coverages for this analysis. Data sources used include California Natural Diversity Database (CNDDB), Sandag, FWS, USGS, and the San Diego County Breeding Bird Atlas (from contractor on retainer with Cleveland NF). FWS determined that using occurrence data from 1985 to the present would provide the most accurate information. Species occurrence information discussed in this assessment is based on formal surveys for these species, habitat inventories conducted prior to the 2003 fires, and post fire reconnaissance. Documents, inventory data, sighting records, vegetation maps and other species specific information referenced in this report are on file at the offices mentioned above.

A. Background

Specific information about start times, causes, and fire suppression actions taken are available in the BAER Operations Assessment, and from the California Division of Forestry, BIA, BLM and the Cleveland National Forest (CNF). Fire behavior was characterized by critically low live fuel moistures (<50% live; <5% dead), high temperatures, low relative humidities, and strong Santa Ana winds averaging 20 miles per hour, with gusts to 50 mph. These factors resulted in explosive, deadly burning conditions. The fires moved rapidly through all vegetation types, leaving little vegetation unburned. The majority of the acres burned within the first 2 burn periods from the time of origin.

SUMMARY OF FIRE START DATES AND ACREAGES				
FIRE	START DATE	TOTAL FIRE ACREAGE	BLM ACREAGE w/in FIRE PERIMETER	BIA TRUST LAND ACREAGE W/in FIRE PERIMTER
OTAY	10/26/03	44,698	21,925	0
CEDAR	10/2503	280,059	4,854	24,444
PARADISE	10/26/03	56,427	3,442	5,202
OLD	10/25/03	90,773	2,347	746
TOTALS		471,957	32,568	30,392

SUMMARY OF FIRE SUPPRESSION IMPACTS ACROSS ALL OWNERSHIPS Reference Suppression Impact/Treatments Map 5A							
FIRE	MILES HAND LINE	MILES DOZER LINE	MILES OF ROAD IMPACTED	NUMBER DROP POINTS	# HELI-SPOTS	# ICP	# SAFETY ZONES
OTAY	0	0	0	0	0	0	0
CEDAR	151.5	66.5	Data unavailable	9	1 Helibase	2	
PARADISE	29	48.6	0	17	3	1	6
OLD	120	53.3	Data unavailable	18	5	1	8

SUMMARY OF FIRE SUPPRESSION ACTIONS ACROSS ALL OWNERSHIPS: WATER AND FIRE RETARDANT USE		
FIRE	GALLONS FIRE RETARDANT	GALLONS WATER (estimated)
OTAY	6,800	0
CEDAR	396,400	2,628,000 (estimate 3 acre feet) taken from ponds, tanks and reservoirs.

		No additives in this water.
PARADISE	106,000 map of primary drop targets on file with BAER supporting documentation	Unknown amount; taken from ponds, tanks and reservoirs. No additives to this water.
OLD	Data unavailable	Data unavailable

Soils were impacted to varying degrees as burn severity varied across the landscape. Detailed information is discussed in the Soil and Watershed Assessment; also see Soil Burn Severity Map 10A.

SUMMMARY OF FIRE BURN SEVERITY ACROSS ALL OWNERSHIPS									
FIRE	TOTAL ACREAGE	ACRES HIGH BURN SEVERITY	%	ACRES MODERATE BURN SEVERITY	%	ACRES LOW BURN SEVERITY	%	ACRES UNBURNED	%
OTAY	44,704	2,209	5	9,147	20	28,892	65	4,456	10
CEDAR	280,059	24,564	9	170,659	61	51,105	18	33,731	12
PARADISE	56,431	7,685	13	37,634	67	5,746	10	5,367	10

Vegetation

The fires burned through a wide variety of vegetation communities, including oak woodlands, chaparral, coastal sage scrub, big sagebrush scrub, riparian and wetlands. Specific information on the vegetation communities included in the fire perimeters documented in the BAER Vegetation Report. Pre-Fire vegetation is shown on Map 4A and Vegetation Mortality is shown on Map 6A.

The following is a summary of the major vegetation types that occur within the burned area:

Agriculture	0	903	30	29	3,272	4,234
Chaparral	3,270	15,545	151	40,337	75,961	135,264
Coastal sage scrub	644	2,801	36	8,420	33,220	45,121
Coastal sage/ Chaparral scrub	591	671	0	2,379	2,425	6,066
Eucalyptus woodland	0	23	0	3	324	350
Forest	93	464	0	2,889	19,218	22,664
Woodland	216	1,874	0	4,628	15,315	22,033
Grasslands/ meadows/ vernal pools	0	1,198	96	525	12,968	14,787
Riparian	33	721	19	1,734	4,427	6,934
Scrub	0	0	0	65	24	89
Water	0	1	0	11	2,171	2,183
Developed	6	184	0	33	14,878	15,101
Disturbed	0	32	0	0	3,809	3,841
Un-vegetated	0	28	0	4	491	1,390
Total	4,853	24,445	332	61,057	188,502	**280,059**

Agriculture	3	92			3,086	3,181
Chaparral	2,649	2,644	300	5,606	14,190	25,389
Coastal sage scrub	433	1,092		36	3,683	5,244
Coastal sage/ Chaparral scrub		565		2,038	778	3,381
Eucalyptus woodland		5			64	69
Forest	20	9			316	345
Woodland	271	422	9	1,712	9,779	12,193
Grasslands/ meadows/ vernal pools		65	40	31	4,385	4,521
Riparian	59	63	72	72	439	705
Scrub						
Water	4			1	193	198
Developed	1	243			887	1,131
Disturbed					26	26
Un-vegetated	2				42	44
Total	3,442	5,200	421	9,496	37,868	**56,428**

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		Other Federal		
Agriculture	52		289	341
Chaparral	10,652	7	4,142	14,801
Coastal sage scrub	5,574	260	15,264	21,098
Coastal sage/ Chaparral scrub	194		132	326
Eucalyptus woodland			5	5
Forest	5,112		577	5,689
Woodland	4		235	239
Grasslands/ meadows/ vernal pools	276		823	1,099
Riparian	54	2	436	492
Scrub				
Water			8	8
Developed			206	206
Disturbed	3		367	370
Un-vegetated	4		23	25
Total	21,925	269	22,507	**44,699**

Agriculture	0	0	0	22	22
Basin sagebrush	0	0	241	8	249
Chaparral	2182	170	36719	13535	52606

Coastal sage scrub	101	522	5901	7486	14010
Developed	0	7	7	734	748
Meadow	0	27	113	296	436
Mixed Conifer	0	0	8852	2995	11847
Pine Forest	0	0	1366	0	1366
Riparian	0	5	444	335	784
Un-vegetated	28	11	190	786	1015
Water	0	0	6	917	923
Woodland	30	0	4207	2034	6271
Other	1	0	2	453	456
Total	2342	742	58048	29601	**90733**

Vegetative resources were impacted to varying degrees and fire intensity varied across the landscape (effects above the soils). Review BAER vegetation specialist report for more details on vegetative resources.

B. Reconnaissance Methodology and Results

Information used in this assessment is based on a review of relevant literature, species sightings, habitat inventory data, and personal communication provided by BLM, BIA, California Department of Fish and Game (CDFG), FWS, U. S. Geological Survey (USGS), County of San Diego, City of San Diego, San Diego State University, The Nature Conservancy (TNC) and several consulting Biologists.

From Emilie Luciani, FWS GIS Specialist: Data sets used to develop BAER assessments included:

- FWS Species data was used to develop:
  - Proposed and final critical habitat designation for:
    - Final coastal California gnatcatcher (remanded)
    - Proposed coastal California gnatcatcher
    - Final least Bell's vireo
    - Final Otay tarplant
    - Final Quino checkerspot butterfly critical habitat
    - Final San Diego fairy shrimp (remanded)
    - Proposed San Diego fair shrimp critical habitat
  - Quino checkerspot butterfly recovery units
  - T&E species locations
  - CAGN modeled habitat
  - Arroyo toad modeled habitat.
- CNDDB – CDFG database of species locations
- Sandag – regional species database developed for Multi-Species Conservation Program (MSCP), updated for Multi-Species Habitat Conservation Plan
- USGS-species locations on BLM lands
- Michael Klein, Consultant – maps of Thorne's hairstreak butterfly locations

Other species data sets received and reviewed to determine if any of the information was relevant to this BAER Wildlife Assessment

- Technology Associates International Corporation – species locations throughout San Diego County
- County of San Diego – predictive species models throughout the County
- CDFG-species occurrences on CDFG lands
- Exotic species database: TNC – exotic weeds within the San Luis Rey River and within the Tijuana River Watersheds.

Additional information was collected by field reconnaissance of the Otay, Cedar, Paradise and Old Fire areas. Reconnaissance included ground review of the fire areas on November 2, 4, 5, 6 and 7. Joyce Schlachter (BLM), Stephen Fillmore (BIA), David Wooten (BIA), Rick Fox (City of San Diego), and Theresa Stewart (CDFG) participated in portions of the fire reconnaissance. Field notes were recorded on Unit Logs (Form ICS 214) and included in the BAER file provided to the BLM, BIA and FWS. The BAER watershed group mapped burn severity. The BAER vegetation specialists mapped vegetation mortality. Habitat maps for the listed species were provided by USFWS (reference Map Volume: Threatened/Endangered Species - Wildlife 8a (Cedar Fire), 8b (Paradise Fire), and 8c (Otay Fire).

To better understand the species habitat information briefly discussed in this wildlife assessment, it is important to review the BAER Vegetation and Watershed Resource Assessments. These reports contain more detailed descriptions of pre-fire vegetation, post-fire vegetative recovery estimates, and the effects of this incident on the watersheds. This wildlife assessment is a summary of the effects to the vegetation in terms of wildlife species and habitats.

The purpose of this assessment is to discuss the potential effects of the fire, suppression actions, and proposed emergency rehabilitation activities to Federally listed, culturally significant, and locally rare species that occur within, adjacent to, or downstream from the Otay, Cedar, Paradise and Old Fire areas. Effects to other wildlife species are not discussed. This assessment is not intended to definitively answer the many questions of effects to specific species that may be raised during a series of incidents such as the 2003 Southern California Fires. The purpose of this assessment is to determine the potential for immediate, emergency actions that may be necessary to prevent further negative effects to listed species. Because the species discussed in this assessment have ranges or territories that extend beyond the fire area, it may be important to include information at a larger scale, across land ownership boundaries, when discussing potential impacts to species and the need for long-term rehabilitation and/or restoration.

C. Findings

GIS analysis of all the occurrence and habitat data for the BLM lands indicated no federally listed or MSCP listed species or habitat occurrence within the Old Fire area, therefore the following discussions focus on the Otay, Cedar and Paradise Fire areas. The BLM lands within the Old Fire area include primarily a chamise chaparral vegetation type, with no riparian habitat. The Forest Service is completing a BAER assessment for the Old Fire that will include occurrences and habitat for federally listed species adjacent to BLM lands within the Old Fire perimeter.

The San Diego National Wildlife Refuge system includes habitat for the Quino checkerspot butterfly (QCB). The 2 parcels that were affected by the fire are 255 acres within the "V" parcel on Jamul Mountain, Otay Fire; and 74 acres of the "Singing Hills" parcel on the southern edge of the Cedar fire. Fire and suppression effects to the FWS Refuge lands were determined by Richard Hadley (FWS) to be minimal, with no suppression effects, and little fire effect to QCB habitat. The FWS lands contribution to Quino checkerspot butterfly habitat is included in the discussion below. Rehabilitation recommendations for these parcels are to replace perimeter fencing and boundary signs that were affected by the fire.

One concern raised by FWS was the potential for debris, sediment and or high flows to reach the lagoons, estuaries and ultimately the ocean as a result of these fires. Discussion of this concern with the BAER Watershed Specialists indicated that all watersheds within the fire areas drain into reservoirs. These will catch any flows before the water drains into the ocean.

Biological Assessment for Federally Listed Species

Direct effects as described in this report refer to mortality or disturbance that results in flushing, displacement or harassment of the animal. Indirect effects refer to modification of habitat and effects to prey species.

The following federally listed species were identified as occurring, or having habitat within the fire areas, but not on the DOI lands addressed by this assessment: Stephen's kangaroo rat, bald eagle, southwestern willow flycatcher, Riverside fairy shrimp, and San Diego fairy shrimp. These species are not addressed as part of this Biological Assessment. Potential exists for post- fire flooding and/or debris flows to effect the southwestern willow flycatcher (Cedar Fire), Riverside fairy shrimp and San Diego fairy shrimp (below Otay Fire).

Federally listed species that occur on DOI lands within the fire areas include the Coastal California gnatcatcher, least Bell's vireo, Quino checkerspot butterfly, and arroyo toad.

COASTAL CALIFORNIA GNATCATCHER: The Coastal California gnatcatcher (CAGN) occurs on coastal slopes in Southern California, ranging from southern Ventura southward through San Diego County, and into Baja California. CAGN typically occurs in or near coastal sage scrub habitat. CAGN also uses chaparral, grassland, and riparian habitats where they occur adjacent to sage scrub. The California gnatcatcher is primarily insectivorous, non-migratory, and exhibits strong site tenacity. CAGN diet includes primarily leaf- and plant-hoppers, and spiders. True bugs, wasps, bees, and ants are only minor components of the diet. Within the fire areas, there were no known nesting occurrences on DOI lands.

The FWS designated Critical Habitat in 2000. That determination was remanded by court order, but the designation is still in place until the new Critical Habitat proposal is completed. For the most part, the old and new critical habitat acres overlap. The CAGN habitat model was used to determine where the critical habitat was designated, but the resulting mapped acreages of critical habitat include areas that were not identified as part of the modeled habitat. The modeled habitat covers more acreage that the Critical Habitat (remanded and proposed), and the total acreage figures for each habitat designation cannot be added together to reflect a larger habitat set. The following table summarizes CAGN habitat included within the fire areas, across all land ownerships. All data in the following tables was provided by Emilie Luciani, FWS GIS Specialist.

COASTAL CALIFORNIA GNATCATCHER HABITAT WITHIN FIRE PERIMETERS, ACROSS ALL OWNERSHIPS			
FIRE	CRITICAL HABITAT Acres	PROPOSED CRITICAL HABITAT Acres (overlaps with Critical Habitat)	MODELED HABITAT Acres (overlaps with critical habitat)
Otay	3,835	4,027	10,209
Cedar	20,088	19,258	38,856
Paradise	831	995	8,658
TOTALS	24,754	24,280	57,723

FIRE DIRECT EFFECTS: Any CAGN within the fire areas may have been able to fly out of the way of flaming fronts. However, given that these fires were mostly fast, wind driven events that consumed large acreages in short periods of time, it is possible that many of the birds within the fire areas were killed. There is little vegetation left within the fire perimeters that would have been available as refugia sites for fleeing animals. There are no known nesting occurrences data for the DOI lands addressed in this assessment. It is not possible to determine, based on known pre-fire information, if nest sites were lost or modified by the fires on DOI lands.

FIRE INDIRECT EFFECTS: The coastal sage scrub vegetation community in this area is vulnerable to type-conversion to grassland because much of the lands burned by the fire have experienced a relatively high fire occurrence in the recent past. The following table summarizes the extent of effects to designated CAGN habitat across all ownerships within the fire perimeters.

OTAY		
ACRES OF FINAL CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNERSHIP		
VEG MORTALITY	OWNERSHIP	CRITICAL HABITAT Acres
0-25%	BLM	0.14
	Private	196.51
26-50%	City	0.36
	County	7.08
	Private	129.13
	State	33.92
76+%	BLM	0.67
	City	5.63
	Other Federal	267.96
	Private	2953.64
	State	239.65
GRAND TOTAL		3834.69

OTAY		
ACRES OF PROPOSED CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNERSHIP		
VEG MORTALITY	OWNERSHIP	PROPOSED CRITICAL HABITAT Acres
0-25%	BLM	0.14
	Private	196.51
26-50%	City	0.36
	County	7.08
	Private	129.13
	State	33.92
76+%	BLM	0.94
	City	5.66
	Other Federal	267.05
	Private	3132.26
	State	253.82
GRAND TOTAL		4026.87

OTAY					
ACRES OF MODELED CAGN HABITAT BY VEG MORTALITY AND LAND OWNERSHIP					
		CAGC HABITAT EVALUATION MODEL			
VEG MORTALITY	OWNERSHIP	LOW	MODERATE	HIGH	GRAND TOTAL
0-25%	BLM	32.8	88.63	142.44	37.68
	County			0.25	4.47
	Private		3.34	69.39	133.41
26-50%	BLM			46.52	5.04

	City			40.37	36.15
	County			32.62	76.23
	Private			14.12	92.67
	State			1.07	47.22
51-75%					0
76+%	BLM	381.03	1759.06	2544.54	1081.69
	City		295.35	485.96	723.51
	County		0.15	58.62	172.24
	Other Federal	0.15	49.69	136.76	81.5
	Private	502.34	1529.85	3906.94	6123.94
	State		77.4	616.45	1589.89
	Water District			0.51	3.31
GRAND TOTAL		916.32	3803.47	8096.56	10208.95

CEDAR		
ACRES OF FINAL CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNERSHIP		
VEG MORTALITY	OWNERSHIP	CRITICAL HABITAT Acres
0-25%	BLM	1.59
	City	1.83
	County	8.15
	Military Reservation	0.56
	Private	691.34
	FS	6.97
	Water District	55.08
26-50%	Private	72.21
	FS	37
	Water District	97.3
51-75%	BLM	38.86
	Military Reservation	0.24
	Private	330.96
	FS	231
76%+	BLM	1,308.12
	Capitan Grande Reservation	0.08
	City	2.55
	County	510.78
	Military Reservation	40.23
	Other Federal	52.62
	Private	7056.03
	FS	9013.14
	Water District	531.66
GRAND TOTAL		20,088.3

CEDAR		
ACRES OF PROPOSED CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNERSHIP		
VEG MORTALITY	OWNERSHIP	PROPOSED CRITICAL HABITAT Acres
0-25%	City	9.03
	Private	131.49

	FS	7.33
	Water District	48.86
26-50%	Private	84.71
	FS	38.38
	Water District	97.3
51-75%	Capitan Grande Reservation	0.17
	City	42.07
	Private	485.43
	FS	340.9
76+%	BLM	23.93
	Capitan Grande Reservation	64.43
	City	2,735.59
	County	28.74
	Military Reservation	3.98
	Other Federal	52.62
	Private	5,597.42
	FS	8,950.38
	Water District	514.92
GRAND TOTAL		19,257.68

CEDAR					
ACRES OF MODELED CAGN HABITAT BY VEG MORTALITY AND LAND OWNERSHIP					
		CAGC HABITAT EVALUATION MODEL			
VEG MORTALITY	OWNERSHIP	LOW	MODERATE	HIGH	GRAND TOTAL
0-25%	BLM	0.17			0.17
	CDFG		0.34		0.34
	City	0.4	3.13	3.45	6.98
	County	8.64	0.76	4.07	13.47
	Military Reservation	0.88	34.66	19.59	55.13
	Other Federal		0.34		0.34
	Other Special District			0.38	0.38
	Private	78.63	47.83	82.27	208.73
	School District			0.57	0.57
	State	2.2	0.41	0.6	3.21
	State (Caltrans)	0.84	3.2	5.6	9.64
	FS	0.41			0.41
	Water District	0.7	1.52	7.76	9.98
26-50%	Private	73.19	1.67		74.86
	FS	3.64			3.64
	Water District		0.91	0.48	1.39
51-75%	Barona Reservations	1.14			1.14
	BLM	9.11	0.31		9.42
	Capitan Grande Reservation	23.21	3.03		26.24
	City	7.03	13.82	4.73	25.58
	County	1	0.56		1.56
	Military Reservation		0.11	0.07	0.18
	Private	246.21	19.11	16.3	281.62
	State	3.44		0.03	3.47
	FS	85.22			85.22
	Water District	0.02		0.29	0.31

76+%	Barona Reservation	105.83			105.83
	BLM	638.35	36.89		672.24
	CDFG	15.39	12.56	3.55	31.5
	Capitan Grande Reservation	1,280.71	528.73		1,809.44
	City	1,018.34	1,313.23	986.69	3,318.26
	County	504.09	360.46	629.8	1494.35
	Inaja Reservation	10.02			10.02
	Military Reservation	150.89	1,675.46	2,254.42	4,080.77
	Other Federal		66.68	18.64	85.32
	Other Special District			2.76	2.76
	Private	9,443.4	4,038.8	6,705.8	20,188
	School District		1.16	76.38	76.44
	State	521.85	229.59	283.91	1,035.35
	State (Caltrans)	4.81	12.82	72.12	89.75
	FS	4,344.09	136.64		4,480.73
	Water District	120.89	175.48	255.29	551.66
GRAND TOTAL		18,701.74	8,719.11	11,435.55	38,856.4

PARADISE		
ACRES OF FINAL CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNER		
VEG MORTALITY	OWNERSHIP	CRITICAL HABITAT Acres
0-25%	City	4.29
	Private	44.74
26-50%	City	158.11
	Private	112.8
76+%	City	234.58
	Private	276.03
GRAND TOTAL		830.55

PARADISE		
ACRES OF PROPOSED CAGN CRITICAL HABITAT BY VEG MORTALITY AND LAND OWNERSHIP		
VEG MORTALITY	OWNERSHIP	PROPOSED CRITICAL HABITAT Acres
0-25%	City	4.95
	Private	45
26-50%	City	207.58
	Private	139.46
76+%	City	290.17
	Private	308.23
GRAND TOTAL		995.39

PARADISE					
ACRES OF MODELED CAGN HABITAT BY VEG MORTALITY AND LAND OWNERSHIP					
		CAGC HABITAT EVALUATION MODEL			
VEG MORTALITY	OWNERSHIP	LOW	MODERATE	HIGH	GRAND TOTAL
0-25%	BLM		0.33		0.33
	City	18.99	0.22		19.21

	County		0.05		0.05
	Private	44.73	18.46	0.6	63.79
	Rincon Reservation	0.56	3.27	3.69	7.52
	San Pasqual Reservation	3.84			3.84
	Water District	0.09	0.02		0.11
26-50%	BLM		4.69		4.69
	City	107.08	20.59		127.67
	Private	53.42	72.25		125.67
	USDA Forest Service	143.98	213.32		357.3
51-75%	City	2.05	7.65		9.7
	USDA Forest Service	92.51	83.44		175.95
76+%	BLM	145.51	263.87	21.44	430.82
	City	157.22	449.26	37.23	643.71
	County	388.58	625.84	116.38	1130.8
	Fire District	0.08			0.08
	La Jolla Reservation		5.57		5.57
	Private	1051.04	1136.61	124.37	2312.02
	Rincon Reservation	208.39	810.74	387.09	1406.22
	San Pasqual Reservation	269.42			269.42
	USDA Forest Service	518.03	1042.78		1560.81
	Water District				2.31
GRAND TOTAL		3207.28	4759.51	690.8	8657.59

FIRE SUPPRESSION EFFECTS: Very little dozer line was constructed within the four fire areas. Based on an overlay of dozer line with the habitat model, it was determined that a total of 0.3 acre of dozer line was constructed on DOI lands within CAGN Critical and modeled habitat. This occurred on the Jamul and La Jolla Reservations. A total of 1 to 2 acres of Critical Habitat (CH) was affected across all three fires, all ownerships (1 acre remanded CH or 2 acres proposed CH). Some back firing occurred on all of the fire areas, particularly where there was an opportunity to protect lives and property. No map of habitat modified by backfire operations was generated for this report. It is thought that the total acreage affected by this suppression action was insignificant relative to the total amount of habitat lost or modified throughout the fire areas across all land ownerships. The 0.3 acres Critical Habitat lost to dozer line construction represents far less than one percent of the of the total affected by the actual wild fire.

EMERGENCY REHABILITATION EFFECTS: There are no negative effects expected from proposed emergency rehabilitation (see list below). Soil and slope stabilization treatments should benefit CAGN habitat.

POST-FIRE CONCERN: A concern was identified that the CAGN population in southern California may now be more susceptible to the effects of West Nile Virus because of habitat loss and mortality. If the numbers of CAGN in the population were significantly reduced by the fires, the loss of even a small number of birds to this virus may be significant. San Diego Vector Control was contacted to determine if this is a concern. Chris Wickham, DEH Vector Supervisor, provided the following information: There has been some bird mortality in San Diego County in several locations. This past year, in Valley Center, a sparrow came back positive. A horse tested positive in Blossom Valley and south of El Cajon, and several corvids, mainly crows and mockingbirds, have tested positive in other locations such as Scripps Ranch, Potrero, Dehesa, El Cajon, Temecula and Capistrano. He stated that the second year the virus is present in an area is usually the most devastating because of lack of resistance. In the third year, mortality decreases. There may be increased mortality this next year as the West Nile Virus spreads in San Diego County. Joyce Schlachter reported that a horse in Alpine was tested positive by a local Veterinarian.

POST-FIRE OBSERVATIONS: CAGN were not observed during post fire reconnaissance.

LEAST BELL'S VIREO: Least Bell's vireo (LBV) is a migratory song bird that primarily occupies riparian habitats with dense cover. The vegetative understory is typically dominated by sandbar willow, mule fat, young individuals of other willow species, such as arroyo willow or black willow, and one or more herbaceous species. Important overstory species include mature arroyo willows and black willows. Other overstory species that may contribute to vireo habitat include cottonwoods, western sycamore, and coast live oak. The vireo uses habitat that is limited to the immediate vicinity of water courses. It primarily nests in small, remnant segments of vegetation typically dominated by willows and mule fat but may also use a variety of shrubs, trees, and vines. Nests are typically built within 3 feet of the ground in the fork of willows, wild rose, mule fat, or other understory vegetation. Cover surrounding nests is usually a moderately open midstory with an overstory of willow, cottonwood, sycamore, or oak. Crown cover is usually more than 50 percent and contains occasional small openings. The most critical structural component to least Bell's vireo breeding habitat is a dense shrub layer at 2 to 10 ft above the ground. Although this habitat exists within the fire area, none was mapped, or observed, as occurring on the BLM, BIA or FWS lands within the fire perimeters. The birds forage in riparian and adjoining chaparral habitat. Once occurrence of LBV within the Otay Fire area was listed in the FWS database, on BLM land, Marron Valley. This was a single bird, sighted in April, 1992. No Critical Habitat was affected on these three land ownerships.

DIRECT EFFECTS: LBV migrated south for the winter season in September and were not present when the fires burned.

INDIRECT EFFECTS: An undetermined amount of LBV foraging habitat was modified within the portions of the fires that burned on DOI lands. This habitat was primarily chaparral vegetation types adjacent to riparian habitats.

FIRE SUPPRESSION EFFECTS: Very little dozer line was constructed on the four fire areas. Based on fire area reconnaissance, it is thought that loss of LBV habitat to dozer line was minimal. An overlay of the dozer line with LBV Critical Habitat adjacent to the fires showed no overlap. Some back firing occurred on all of the fire areas, particularly where there was an opportunity to protect lives and property. No map of habitat modified by backfire operations was generated for this report. It is thought that the total acreage affected by this action was insignificant relative to the total amount of habitat lost or modified throughout the fire areas, across all land ownerships.

EMERGENCY REHABILITATION EFFECTS: There are no negative effects expected from proposed emergency rehabilitation (see list below). Soil and slope stabilization treatments should benefit LBV habitat.

POST FIRE FLOOD EFFECTS: Where the LBV habitat occurs along Delzura Creek within the fire, the channel is low gradient and is expected to migrate across the floodplain in response to precipitation events. Scour and deposition that will occur as the channel migrates will create new alluvial deposits for riparian species to reestablish. The riparian vegetation in this stream is adapted to disturbance by high flows and is likely to reestablish quickly, but may take several years to reach the level of maturity suitable for LBV habitat.

POST-FIRE OBSERVATIONS: LBV were not observed during post fire reconnaissance. Vegetation within the riparian areas was observed to be resprouting about two weeks after the fire burned.

QUINO CHECKERSPOT BUTTERFLY
Prepared by Dr. Alison Anderson, Entomologist, Carlsbad Fish and Wildlife Office, FWS

The Recovery Plan for the Quino checkerspot butterfly identifies 6 recovery units. The northern portion of its range is centered in southwestern Riverside Co., and consists of four contiguous recovery units based primarily on habitat type. The southern portion of the QCB's range consists of two separate recovery units, composing approximately half its known distribution. Known portions of population distributions are mapped using one kilometer (km) radii around recent QCB observation locations, based on studies of the

species movement within and between habitat patches. Where two observations have overlapping radii, they are considered proximal enough to belong to the same population. These spatially clustered (with in 2 km of each other) QCB observations are called “occurrence complexes,” and the largest ones (in area and/or number of reported individuals) are termed “core occurrence complexes.” QCB populations are believed to have a metapopulation structure, and the core occurrence complexes are the likely metapopulation distribution centers containing local populations that are sources of immigrants for unoccupied habitat patches. “The protected, managed population segments within core occurrence complexes must demonstrate evidence of resilience” in order to satisfy Recovery Criteria (for downlisting; criteria 4, page 94).

It is not clear how severely diapausing larvae may have been affected by the fire within the footprint, or if unaffected population distribution segments are sufficient to retain long-term resiliency of populations within the recovery unit. Fire is considered a significant threat to Quino, and was apparently the final cause of the species’ extirpation from Orange County in 1967, despite amateur reintroduction attempts in 1974.

DIRECT EFFECTS: Within the Southwestern San Diego Recovery Unit, the Otay Fire resulted in the following statistics:

?? The burn footprint coded as the 76%+ vegetation mortality category encompassed 97% of the butterfly observations from the core Otay Lakes/Rancho Jamul Occurrence Complex, including all of the Otay Lakes habitat area described as “a regional keystone with regards to Quino checkerspot landscape connectivity.”
?? The burn footprint coded as the 76%+ and 26-50% vegetation mortality category encompassed 93% of butterfly observations from the core East Otay Mesa Occurrence Complex.
?? The burn footprint coded as the 76%+ vegetation mortality category encompassed approximately half the habitat (but only 6% of butterfly observations) within the core Marron Valley Occurrence Complex.
?? 50% (32,278 acres) of designated Quino critical habitat (total 64,467 acres) within the burn footprint was categorized as 76%+ vegetation mortality.
?? All three core occurrence complexes within the southern portion of Quino’s range were significantly affected. 53% of all Quino observations in the affected recovery unit fell within the fire perimeter.
?? 35 percent (44,669 acres) of the entire Recovery Unit (total 128,490 acres) was included within the Otay Fire perimeter.
?? All butterfly observations in 2 non-core occurrence complexes and 63% of butterflies observed in the relatively large non-core Proctor Valley Occurrence complex were within the burn footprint coded as high vegetation mortality. Eight of the 11 non-core (included within the total of 14: 3 core, 11 non-core) occurrence complexes within the Recovery Unit were not affected by the fire.
?? In addition to the Otay Fire, the Cedar Fire also burned through all of the butterfly observation locations within the most northern San Diego occurrence complex at San Vicente Reservoir (non-DOI lands). The fire in that area resulted in high mortality of the vegetation.

INDIRECT EFFECTS: It is thought that the fire effects to habitat may be beneficial as the preferred plantago plants grow best in open areas with little competition from other plants. The following table summarizes vegetation mortality within QCB Critical Habitat and within the Recovery Unit, by land ownership.

OTAY FIRE		
ACRES OF QUINO CHECKERSPOT BUTTERFLY CRITICAL HABITAT BY V EG MORTALITY & OWNERSHIP (all of these acres are included within the Recovery Unit summarized below)		
VEG MORTALITY	OWNERSHIP	QUINO CRITICAL HABITAT
0-25%	BLM	2665.51
	County	4.79
	Private	553.97

26-50%	BLM	58.84
	City	83.68
	County	122.14
	Private	189.04
	State	374.1
76% +	BLM	13362.67
	City	2124.97
	County	183.26
	Other Federal	268.1
	Private	13519.55
	State	2815.65
	Water District	3.73
GRAND TOTAL		36330
ACRES OF QUINO RECOVERY UNITS BY VEG MORTALITY BY OWNERSHIP		
VEG MORTALITY	OWNERSHIP	QUINO CRITICAL HABITAT
0-25%	BLM	3728.71
	County	4.79
	Private	555.78
26-50%	BLM	58.84
	City	84.13
	County	126.55
	Private	230.33
	State	376.84
76% +	BLM	18106.83
	City	2136.7
	County	270.93
	Other Federal	268.1
	Private	15887.94
	State	2824.65
	Water District	8.06
GRAND TOTAL		44669.18

FIRE SUPPRESSION EFFECTS: Some backfiring was conducted on the first day of the Otay Fire to protect lives and property. No maps were made of these actions as the suppression personnel were fully occupied with suppressing the fire. The backfires were set from the Otay Reservoir area, burning east, and in a separate action, from Hwy 94 to the south. Some of the backfire may have been on BLM lands. Some QCB occurrence locations may have been affected by this action, as well as the habitat. No dozer lines, water drops or fire retardant were used during the suppression effort.

EMERGENCY REHABILITATION EFFECTS: There are no expected negative effects from emergency rehabilitation (see list below). Soil and slope stabilization treatments should have positive effects where QCB habitat occurs.

POST-FIRE POTENTIAL EFFECTS: Concern was expressed about the possible effects of surface erosion within known occurrence locations. Post-fire soil movement may erode away top soils that would best grow the host plants. An additional effect may be if the diapaused animals are burrowed in cracks beneath the soil surface, sediment deposition could bury them or surface erosion, especially rill formation (mini channels created on the on the soil surface due to overland flow) could erode their burrow habitat. The potential for this to occur was discussed with the BAER Watershed Specialists. They determined that it is unlikely that any sediment deposition or surface erosion would affect a burrowed butterfly because of the probability of a rill forming or of sediment being deposited in the exact location of the

burrowed diapaused animal. It is estimated that approximately 5 percent of an individual hillslope in an area classified as high soil burn severity will have a network of rills forming and experience sediment movement and subsequent sediment deposition in response to precipitation events. Therefore, it is unlikely that a diapaused animal would be buried or their habitat would be lost to surface erosion.

POST-FIRE OBSERVATIONS: Quino checkerspot butterflies were not observed during post fire reconnaissance.

ARROYO TOAD: Arroyo toads (AT) require shallow, slow-moving streams, and riparian habitats that have natural flooding regimes which maintain areas of open, sparsely vegetated, sandy stream channels and terraces. Optimal breeding habitat consists of low gradient stream reaches that have shallow pools with fine textured substrates (i.e., sand or gravel). Upland habitats used by AT during both the breeding and non-breeding seasons include alluvial scrub, coastal sage scrub, chaparral, grassland, and oak woodland. Within the four fire areas, on BLM and Tribal lands, AT occurrences, and/or modeled habitat, occurs only on the Paradise Fire, Rincon Reservation. Occurrences and/or modeled habitat occur below burned areas (other land jurisdictions) on the Otay, Cedar and Old Fires.

DIRECT EFFECTS: It is thought that the toads were burrowed up to 6 inches under the ground when the fires burned. The Paradise Fire was wind driven and burned quickly through the Arroyo Toad habitat. Vegetation was only partially consumed or scorched in the drainage bottom. Much of the fine fuels remain. Because the fire residence time in the drainage bottom was short, it is thought that the toads did not experience lethal temperatures. Therefore, it is thought that there were no fire effects to the Arroyo toads.

INDIRECT EFFECTS: Within both the Cedar and Paradise fires, Arroyo toad habitat was affected by the wildfire. Within the Paradise Fire, Rincon Reservation, the fire was fast moving and scorched most of the vegetation in the drainages, but the fine fuels and vegetation in the drainage bottom was not fully consumed. Grasses, shrubs, oak, sycamore and cottonwood trees on the San Luis Rey River upland habitat were top killed by the fire. The soils, sand and gravel used by the toad remain suitable for use after the fire. There was no standing water in the San Luis Rey River drainage during the time of the fire.

FIRE SUPPRESSION EFFECTS: The only known suppression affects to AT are from the dozer line constructed behind the Harrah's Casino. Dozer line construction resulted in damage to the irrigation line that watered trees in the drainage. The dozer line primarily scraped the vegetation away, with little disturbance to the sand. Lost vegetation included primarily grasses and tumble weeds. The dozer may have run over burrowed AT, causing possible injury or mortality. The dozer line will not be rehabilitated because it is only a shallow scrape in the sand, and any additional work could further affect burrowed toads. The irrigation line will be repaired and the 6 fire killed trees (those planted as part of a previous mitigation project) will be replanted.

EMERGENCY REHABILITATION EFFECTS: There are no negative effects expected from emergency rehabilitation (see list below). Soil and slope stabilization treatments should have a beneficial effect by reducing the amount of debris and sediment that may flow into the AT habitat.

POST FIRE FLOOD EFFECTS: Episodic flooding is critical to keep the low stream terraces relatively vegetation free and the soils friable enough for juvenile and adult toads to create burrows. The habitat located within the San Luis Ray River and Paradise Creek is expected to experience sediment and debris deposition (limbs, large rocks) in response to most precipitation events. Deposition of fine sediments to sand, gravels, or large rocks is likely to occur within the main channel and is likely to be from several inches up to a few feet deep. It is unlikely that this will occur outside of the incised channel, in the uplands where it is thought that most of the AT burrows occur. There is a low probability that the post-fire flood flows will overtop the banks and deposit sediment onto the floodplain.

The same conditions should apply to the drainage that flows out of the Capitan Grande Reservation and into the El Capitan Reservoir.

POST-FIRE OBSERVATIONS: Arroyo toads were not observed during post fire reconnaissance. On November 13, 2003, fine soil, sand, gravel and ash flowed into Paradise Creek from where it crosses under the S6 road, and ending just above the confluence with the San Luis Rey River, in the vicinity of the known arroyo toads. On November 14, the resulting deposition was observed to be about 6 to 8 inches deep and contained within the previously incised channel. The precipitation event that caused this flow was estimated to be approximately 1.5 inches of rain falling within 3 hours.

SENSITIVE SPECIES

The BLM has numerous species occurring within the fire areas that are designated as sensitive. Using the 1998 Final Multiple Species Conservation Program (MSCP) list, the following species were identified by Joyce Schlachter, BLM and John DiGregario, FWS as possibly occurring within the fire areas:

MSCP SPECIES THAT MAY OCCUR WITHIN THE FIRE AREAS	
Thorne's hairstreak butterfly	Burrowing owl
Southwestern pond turtle	Coastal cactus wren
San Diego horned lizard	Western bluebird
Canada goose	California rufous-crowned sparrow
Northern harrier	Large-billed Savannah sparrow
Cooper's hawk	Tricolored blackbird
Swainson's hawk	American badger
Ferruginous hawk	Mountain lion
Golden eagle	Southern mule deer
American peregrine falcon	Orange-throated whiptail

The Thorne's hairstreak butterfly is considered to be a local narrow endemic species. It was identified by FWS, BLM and local Biologists as potentially negatively affected by the Otay Fire. Dr. Alison Anderson, Entomologist, Carlsbad Fish and Wildlife Office, FWS, provided the following information.

The Thorne's hairstreak butterfly (THB) was described as a species by Brown in 1982, and petitioned for listing as endangered in 1991. THB was not listed because the petition did not present substantial information indicating that the action may be warranted. However, it did consider the species to be a Category 2 Candidate, defined as taxa for which information indicates listing is possibly appropriate, but conclusive data to support the rule are not currently available.

The THB only deposits eggs and feeds on Tecate cypress, and is recognized as a distinct taxon geographically isolated from its closest relatives. THB has only been recorded from within the area burned by the 2003 Otay Fire. There are populations of Tecate cypress south of the fire area in Baja California, Mexico, east of the fire area near Tecate Peak, and two distant populations, one on Guatay Mountain near Descanso, and one at the north end of the Santa Ana Mountains in Orange County. During the late 80s and early 90s, experienced lepidopterists conducted multiple consecutive annual THB surveys (approximately 10 years) of the Tecate Peak and Guatay Mountain Tecate cypress populations, as well as those known in Baja California, Mexico. No THB were found. Extensive study has not revealed any populations of THB other than the one on Otay Mountain. THB diapauses in the litter at the base of Tecate cypress trees.

All locations where occupancy by THB was recently documented were within the area burned by the Otay Fire. All of these occurrences were located where the fire resulted in mortality of more than 75 percent of the vegetation. A majority of the Tecate cypress stands occurring on BLM lands were burned to some extent. The stand in O'Neal Canyon (private land) is still intact. Because most of the vegetative litter appears to have been consumed by the fire, it is not expected that any diapausing pupae survived in known occupied areas. The only other known location for THB on Otay Mountain was the Tecate cypress

stand on the west side, where vegetation mortality was intermediate. That location was known to be occupied as recently as 1995. However, after the 1996 fire, David Faulkner surveyed for two consecutive years and could not detect the butterflies in that area. Experts believe the THB requires trees older than 20 years for successful reproduction. However, evidence of this life history requirement is anecdotal. The majority of the Tecate cypress on Otay Mountain that were not included in areas mapped as highest vegetation mortality in the Otay Fire were immature (up to 7 years old), primarily located where the fire burned in 1996. Fire is considered the primary threat to THB, and it is possible that the Otay Fire resulted in significant effects to the species.

OTAY FIRE ACRES OF TECATE CYPRESS BY VEGETATION MORTALITY AND OWNERSHIP		
VEGETATION MORTALITY	OWNERSHIP	ACRES
0-25%	BLM	1897.04
	Private	144.54
25-50%	BLM	10.68
	County	4.87
76% +	BLM	4731.30
	City	11.46
	County	0.3
	Private	638.64
	State	32.78
GRAND TOTAL		7471.62

WILDIFE HABITAT IMPROVEMENTS WITHIN THE FIRE AREA: No wildlife habitat improvements were identified. Because there is no grazing on the affected BLM lands, there are no water developments.

Post fire reconnaissance resulted in the following wildlife sightings, by fire area:

Otay: Osprey, flickers, jack rabbits, redtail hawks, ravens, wrentit, kite, scrub jay, blue gray gnatcatcher, American kestrel, acorn woodpeckers, snowy egret, Osprey.

Cedar: Live: Wild turkeys, crows, Steller's jay, acorn woodpeckers, common flicker, redtail hawk, great blue heron. Carcasses: pocket mouse, wood rat, harvest mouse, unidentified small bird spp, cottontail rabbits.

Old: Scrub jays, unidentified hawks,

2003 Southern California Fires (Otay, Cedar, Paradise, Old) Species List

Species lists were obtained on October 29, 2003 from Kathleen Brubaker, U.S. Fish and Wildlife Service (FWS), Carlsbad Office, and on November 3, 2003 from Emilie Luciani, same office. All information provided for the fire areas has been reviewed and refined by Emile using FWS databases to determine which species may occur within the fire area. These lists are for Bureau of Land Management lands (BLM), FWS Refuge lands, and Reservation lands only. A separate list was generated for other jurisdictions. The following federally listed species occur, or have habitat within or downstream from the fire areas:

SPECIES	SCIENTIFIC NAME	LISTING STATUS
Stephen's kangaroo rat	**Dipodomys stephensi**	Endangered
Bald eagle	**Hliaeetus leucocephalus**	Threatened
Coastal California gnatcatcher	**Polioptila californica californica**	Threatened with Critical Habitat
Least Bell's vireo	*Vireo bellii pusillus*	Endangered
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered
Quino checkerspot butterfly	*Euphydryas editha quino*	Endangered with Critical Habitat
Arroyo toad	**Bufo californicus**	Endangered
Riverside fairy shrimp	**Streptocephalus woottoni**	Endangered
San Deigo fairy shrimp	**Branchinecta sandiegonensis**	Endangered

The following species were identified by the FWS as federally listed species potentially existing within, adjacent to, or downstream from the fire area. Through post fire reconnaissance and consultation with local experts, it was determined that these species were not affected by the portion of the fires assessed in this report (no habitat within or adjacent to the fire areas and/or inventories prior to the fires determined absence), or expected to be affected by potential post-fire flooding. These determinations of no effect were based on limited data provided by FWS. Additional information may exist but was not provided by the agencies involved for use in this assessment. That additional data may indicate that there is potential for additional effects to these species. If that is the case, the agency responsible for the lands those species occur on should assess effects and document concerns. The biologists may need to document species presence or absence by season and develop accurate habitat and potential maps for each species for future use. This list focuses on species identified as occurring on the BLM lands and eleven Reservations affected by the fires: San Manuel, Rincon, La Jolla, San Pasqual, Barona, Inaja-Cosmit, Capitan Grande, Viejas, Santa Ysabel, Sycuan, Jamul, and Cuyapaipe.

SPECIES	SCIENTIFIC NAME	LISTING STATUS	REASON FOR NOT ADDRESSING IN THIS DOCUMENT
Peninsular bighorn sheep	*Ovis Canadensis nelsoni*	E	No habitat within fire area.
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	E	No habitat within fire area
Mountain plover	*Charadrius montanus*	PT	No habitat within fire area
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	No habitat within fire area
Laguna mountains skipper	*Pyrgus ruralis lagunae*	E	No habitat within fire area
California red-legged frog	*Rana aurora draytonii*	T	No habitat within fire area; no sightings in fire area; no potential for downstream habitat to be affected by post-fire flooding or debris flows.
Mountain yellow-legged frog	*Rana muscosa*	E	No habitat within fire area; no sightings in fire area; no potential for downstream habitat to be affected by post-fire flooding or debris flows.
Sana Ana sucker	*Catostomus santaanae*	T	No habitat within fire area; no sightings in fire area; no potential for downstream habitat to be affected by post-fire flooding or debris flows.

Threatened = T Endangered = E Critical Habitat = CH

IV. RECOMMENDATIONS

A. Emergency Stabilization: No treatments recommended.

B. Rehabilitation

1. Management: No treatments recommended.

2. Monitoring:

✍✍ Recommend Quino Checkerspot Butterfly Post-Fire Survival monitoring to determine if the number of surviving butterflies is great enough to reestablish the population. If the number of butterflies is too low, a supplemental funding request will be initiated to reestablish the population through captive propogation and ranching of the butterflies on the recovering habitat within the fire area. See Specification and Map 8d.

C. Management (non- specification related)

$ FWS: No further consultation is needed.

$ BIA: The appropriate personnel should continue with Section 7 Emergency Consultation if necessary for the effect of suppression actions to the arroyo toad on the Rincon Reservation. See the attached documentation for Consultation completed to date. Because the suppression rehabilitation actions will have no further effect, and the proposed emergency rehabilitation actions will have no negative effects, there should be no need for further consultation. For California coastal gnatcatcher, it is likely that suppression actions had little effect on the small amount of habitat present on Tribal lands.

$ BLM: Section 7 Emergency Consultation for the possible effect of suppression actions on Coastal gnatcatcher, Least Bell's vireo and Quino checkerspot butterfly were completed on November 14, 2003. Documentation of FWS concurrence should be completed as soon as possible.

$ The determinations documented in this assessment should be reassessed, and Section 7 Consultation reinitiated as needed, if additional rehabilitation measures or vegetation management activities are proposed after November 13, 2003. If non-emergency vegetation management activities are proposed for long-term rehabilitation and restoration of the fire area, another Biological Assessment should be prepared.

$ Recommend Thorne's Hairstreak Butterfly Post-Fire Survival monitoring to determine if the number of surviving butterflies is great enough to reestablish the population. If the number of butterflies is too low, there may be a need to reestablish the population through captive propagation and ranching of the butterflies.

$ The 2003 Southern California Fires provide a unique opportunity for the agency biologists and scientific community to determine species and habitat responses to wildfire. Given the high level of interest regarding the effects of the fire to the federally listed and MSCP species, it seems prudent for those biologists to collaborate on development of a list of questions to address identified concerns. The limited focus of this BAER Team to address immediate treatments for T&E species occurring on Department of the Interior lands allowed only a cursory assessment of fire effects to the many other important species that contribute to biodiversity in San Diego county. As assessment and study continues, if additional new information becomes available on the effects to federally listed species, agency biologists may re-assess the potential need for emergency treatments, with subsequent requests for Emergency Stabilization Rehabilitation funding to treat any emergency situation occurring on federal lands.

$ Monitor bird populations for mortality caused by West Nile Virus. The focus should be on T&E, MSCP, and BLM Sensitive species. Additional information is available at the San Diego County DEH page.

SUMMARY OF EFFECTS TO THREATENED AND ENDANGERED SPECIES

COSTAL CALIFORNIA GNATCATCHER (BIA and BLM only)

FIRE EFFECTS: Approximately 100 percent of the 57,723 acres of modeled habitat, across all land ownership, within the fire perimeters was modified during the fires. Approximately 24,754 acres of Critical Habitat were modified. Birds present in the fire areas may have been lost. Because the fire occurred outside of the breeding season, no active nests were lost.

SUPPRESSION ACTION EFFECTS: Some habitat may have been lost to backfires set to protect lives and property. Based on fire suppression narratives and post fire reconnaissance, it was determined that the amount of habitat lost to these actions was minimal relative to the habitat lost or modified by the wildfires. In addition, 0.3 acres of Critical Habitat may have been removed by dozerline construction. Because the total acreage that may have been affected by either back fire or dozer line construction represents a very small percentage of the habitat affected by the fire, and the total habitat available in San Diego County, and because it appears that no known nesting locations were affected, the determination for effects of suppression actions for both BLM and BIA Trust lands is **may affect, not likely to adversely effect.**

PROPOSED EMERGENCY REHABILITATION ACTION EFFECTS: Other than rehabilitation of the dozer lines and slope stabilization treatments, there are no emergency rehabilitation actions proposed in California gnatcatcher habitat. Both of these treatments should only benefit the habitat as it recovers. Therefore, the determination of emergency rehabilitation action effects to California coastal gnatcatcher for both BLM and BIA Trust lands is **no effect.**

LEAST BELL'S VIREO (BIA and BLM only)

FIRE EFFECTS: The majority of the potential least Bell's vireo habitat within the fire area was negatively affected by the fire, across all land ownerships. Riparian habitat throughout the fire area experienced greater than 80 percent mortality. If this habitat was used by least Bell's vireo, this will reduce nesting and foraging opportunities for this species for the next few years, or until the vegetation recovers. It is thought that no least bell's vireo were present during the fires. There is no designated critical habitat or recorded nesting occurrences within the fire areas on DOI lands.

SUPPRESSION ACTION EFFECTS: Some habitat may have been lost to backfires set to protect lives and property. Based on fire suppression narratives and post fire reconnaissance, it was determined that the amount of habitat lost to these actions was minimal relative to the habitat lost or modified by the wildfires. No habitat was lost to dozer line construction. Therefore, the determination for effects of suppression actions for both BLM and BIA Trust lands is **may affect, not likely to adversely effect.**

PROPOSED EMERGENCY REHABILITATION ACTION EFFECTS: Other than slope stabilization treatments, there are no emergency rehabilitation actions proposed in least Bell's vireo habitat. Both of these treatments should only benefit the habitat as it recovers. Therefore, the determination of emergency rehabilitation action effects to least Bell's vireo for both BLM and BIA Trust lands is **no effect.**

QUINO CHECKERSPOT BUTTERFLY (FWS and BLM lands only)

FIRE EFFECTS: 2.5 of 3 Core Occurrences within the South West Recovery Unit may have been significantly affected by the fire. Quino habitat may have been positively affected because the woody canopy was eliminated. This should increase habitat suitability for the host plants and nectar sources.

SUPPRESSION ACTION EFFECTS: Suppression actions included some backfiring on the first day of the Otay Fire to protect lives and property. Some of the backfire may have burned onto BLM lands. No maps were made of these actions as the suppression personnel were fully occupied with suppressing the fire. However, it is likely, given the fire behavior and perimeter, discussions with suppression personnel

and the mapped quino occurrences, that most of the occurrences and habitat were affected by the wildfire, not backfires. Therefore, the determination of suppression action effects to quino checkerspot butterfly is **may affect, not likely to adversely effect.**

PROPOSED EMERGENCY REHABILITATION ACTION EFFECTS: There are no emergency rehabilitation actions proposed in quino occurrence locations or habitat. Soil and slope stabilization treatments should only benefit the habitat as it recovers. Therefore, the determination of emergency rehabilitation action effects to Quino checkerspot butterfly is **no effect.**

A proposed treatment of noxious weeds in Sycamore Canyon is located adjacent to a Quino checkerspot butterfly occurrence. BLM will conduct NEPA compliance for this proposed action in accordance with their regulations and policy. If needed, consultation on this project will occur during the NEPA analysis process.

ARROYO TOAD (BIA and BLM only)

FIRE EFFECTS: Riparian habitat within the majority of the fire areas experienced high mortality of all vegetation. This vegetation loss may affect the Arroyo toad when it emerges to begin the next breeding cycle. However, most of the riparian vegetation will recover quickly. The toads were burrowed under ground while the fires burned.

SUPPRESSION ACTION EFFECTS: Approximately 0.1 acre of Arroyo toad habitat was affected by dozer line construction in the San Luis Rey River. Because the habitat is not lost, and this acreage represents less than 1 percent of the habitat available in that area, the effect should be minimal. The mitigation project irrigation line was damaged, with subsequent repair. Six trees in the project area will be replaced. Because only a small area of habitat was disturbed, it was determined that the effects of the suppression actions were minimal. Therefore, the determination for suppression effects to arroyo toad is **may affect, not likely to adversely effect.**

PROPOSED EMERGENCY REHABILITATION ACTION EFFECTS: There are no emergency rehabilitation actions proposed in arroyo toad habitat. All treatment specifications include a statement that equipment and supplies should be staged outside of the drainages. Soil and slope stabilization treatments should benefit the Arroyo Toad by decreasing debris and sediment flow into the drainages where the arroyo toad may occur. Therefore, the determination of emergency rehabilitation action effects to arroyo toad is **no effect.**

PROPOSED EMERGENCY REHABILITATION ACTIONS that were analyzed for effects to the species addressed in this assessment (specific information is available on the specification forms developed for each treatment):

Dozer line and handline rehabilitation	Safety zones/drop points/helispot rehabilitation
Structure protection – K rails	Early warning system
Floatable debris removal from burned sites	Sand bag protection
Culvert cleaning	Culvert removal or replacement or armouring
Debris basin design (San Manuel)	Erosion mat
Flood hazard warning signs	Channel cleaning (floatable debris removal)
Sediment basin maintenance (existing basins on San Manuel)	Road closure signs and barricades
Tree hazard mitigation	Hazard tree assessment, short and long term
Noxious weed monitoring	Noxious weed treatment
Fence replacement – boundary	Revegetation monitoring
Mine safety assessment	Replace boundary and safety signs
Replace guard rails	Repair T&E habitat irrigation line & replant trees
Road maintenance	Hazardous material site identification and cleanup
Dam inspection	Soil testing for hazardous materials

V. CONSULTATIONS

The following people participated in post fire reconnaissance, data collection and analysis, and developing the information included in this assessment:

NAME	AGENCY	TITLE	PHONE NUMBER
David Wooten	BIA	Regional Endangered Species Coordinator	916-978-6078
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MAPS LOCATED IN THIS BAER REPORT UNDER APPENDIX III:
TES Wildlife species and critical habitat

SUPPORTING DOCUMENTATION LOCATED IN THIS BAER REPORT UNDER APPENDIX IV:
U. S. Fish and Wildlife Service Species lists

OTHER SUPPORTING DOCUMENTATION LOCATED IN THE BAER REPORT FILES:
ICS 214 Unit logs
Documentation on Emergency Consultation with USFWS
Documentation provided by Agency personnel during Fire reconnaissance
USFWS Species maps

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA WILDFIRES

OPERATIONS ASSESSMENT

I. OBJECTIVES

- Identify, inventory and map fire suppression impacts on Department of Interior (DOI) lands adversely affected by fire suppression activities.
- Prescribe measures to mitigate fire suppression impacts and coordinate with personnel to implement repairs.
- Ensure compliance of suppression repairs with standards developed by the Burned Area Emergency Response (BAER) team and/or host agencies.
- Provide oversight for the implementation of short-term emergency stabilization treatments prescribed by the BAER team.
- Communicate with Incident Management Team (IMT), state & county officials, tribal leaders, federal agencies and private landowners to insure acceptable stabilization and repair techniques are implemented.

II. ISSUES

- Protection of cultural and natural resources during suppression repair efforts.
- Surface disturbance associated with fire suppression actions.
- Implement emergency stabilization treatments to protect watershed resources and reduce risk to life and property.
- Identify road surface damage on BLM and Reservation lands.
- Assess bridge structure damage on the La Jolla Reservation.
- T&E species mitigation disturbed by dozer line on the Rincon Reservation.
- Identify road safety signs burned on the Otay and Paradise fires.
- Identify safety guard rail burned on Reservation land.
- Assess condition of abandoned Mines on the Otay Fire.
- Assess boundary fencing on BLM and Reservation lands.

III. OBSERVATIONS

CEDAR FIRE

A. Background

The Cedar Fire was reported on October 25, 2003 at approximately 1737. The fire started as a result of a hunter lighting a signal fire. Containment occurred on November 4, 2003 at 0600 with no projected control date. Total acreage burned was 274,895 on elevations between 200 feet to 6119 feet above sea level. The fire burned through ground fuels, chaparral and mixed hardwood. Department of the Interior administered lands burned on the Cedar fire include Bureau of Land Management, U.S. Fish and Wildlife Service and seven Indian Reservations. Estimated final cost of suppression of the fire and suppression rehabilitation is $30,692,500.

The National Interagency BAER Team was ordered for the Cedar Fire and work began on October 31, 2003. Operations Section Specialists assigned to the Cedar Fire included Dave Raney, Gavin Lovell and Maurice Williams.

The Cedar fire was divided into east and west zones with two separate Type 1 Incident Management Teams (IMTs). The east zone incident command post (ICP) was located at Tipai Park on the Viejas Indian Reservation and the west zone ICP was at Gillespie Field located in Santee. Communication was established with both zones of the fire to begin coordination with BAER assessments. Operations attended daily IMT briefings and planning meetings to ensure effective communication between BAER and incident management.

Operations coordinated aerial reconnaissance and logistical support for BAER team members. Daily briefs were conducted with BAER team members of current fire behavior, weather and other relevant safety conditions.

B. Reconnaissance Methodology and Results

Operation Specialists, working with IMT Resource Advisors, assessed suppression-related impacts and assisted BAER team members with implementation of short-term mitigation treatments. Treatments were prescribed through the use of aerial reconnaissance and ground surveys that were conducted in conjunction with other BAER team disciplines.

The fire perimeter was recorded by the IMT using Global Positioning Systems (GPS). Areas were surveyed on foot, vehicle, and from the air for additional rehabilitation needs. All known or suspected locations of dozerline, hand line, drop points, helicopter bases and any other suppression related damage was surveyed and mapped. Dozer line repairs, already completed by the IMT, were reviewed and additional recommendations were provided to the IMT rehabilitation coordinator.

C. Findings

Fire suppression related impacts to resources were observed within the Cedar Fire area. Based on BAER team field surveys discussed previously, the following findings have been documented by the Operation Specialists:

Jurisdiction	*Dozer line (Miles)	Hand line	Helibase	Drop Points	Burned Acres
BLM	.1				4,655
BIA-Barona					6,389
BIA-Capitan Grande					15,604
BIA-Cuyapaipe					5
BIA-Inaja					846
BIA-Santa Ysabel	.2				106
BIA-Sucuan					22
BIA-Viejas			1		1,526
Other	66.2		1	9	245,742
Totals	66.5		2	9	274,895

*Dozer lines varied in width from 1 to 15+ blades wide throughout the fire area

As of 11/10/03, California Department of Forestry and Fire Protection (CDF) reported that all known dozerline, drop points, helibases and the ICP on the Cedar Fire had been repaired using hand crews and heavy equipment. Observations from the Bureau of Indian Affairs (BIA) and BAER team members indicate that additional work is still required at the east ICP located on the Viajas Indian Reservation. Additional surveys from the various jurisdictions and additional repair to fully mitigate impacts are needed. See Appendix IV supporting documentation for specifics related to CDF repair agreement. Handline will be rehabilitated where there are specific areas that pose an erosion or runoff problem. Agency resource advisors will identify these areas.

To view photographs of treatments and suppression-related damage see operations photo documentation section of the plan.

PARADISE FIRE

A. Background

The Paradise Fire started on October 26, 2003, at approximately 0130 hours. The cause is still under investigation. The Emergency Command Center received a report of a fire on Valley Center Road just south of Harrah's Casino on the Rincon Indian Reservation. The fire quickly spread to 500 acres within an hour. By 0300, the commander on scene requested additional resources and an Incident Management Team. By 0600, the fire area had strong Santa Anna winds in excess of 70 miles per hour. The fire moved rapidly south into the Paradise Creek drainage and upslope into the heavily populated San Pasqual Indian Reservation.

Containment came on November 6, 2003 by constructing over 46 miles of dozer line, 9 miles of hand line and cold-trailing another 58 miles of fire perimeter. Containment on the north edge of the fire was difficult due the steep terrain, dense chaparral and concerns for firefighter safety. There was a concentration of control lines, safety zones and contingency lines constructed on the north boundary of the fire within the La Jolla Indian Reservation.

Control is expected within a month. The fire burned an area of 56,427 acres consisting of chaparral, riparian woodland, grasslands and a wildland-urban-interface characterized by scattered homes and structures intermixed with native vegetation and landscaping. The fire destroyed 223 structures and 192 other outbuildings. Assessed damaged costs are estimated at $16,383,912. Suppression costs to date are estimated at $13,236,000.

The Operations Section (OPS) assigned to the Paradise Fire consisting of Chris Holbeck and John Perez. Values at risk assessments were started immediately in the fire damaged areas. Effective lines of communication were established with the joint Type 1 Incident Management Teams (IMT) assigned to the fire (Snell, CDF) and (Cowie, USFS). BAER OPS attended IMT briefings and planning meetings daily. In addition, OPS coordinated the aerial reconnaissance and logistical support for BAER team members. Individual specialists were informed of significant developments related to fire growth, weather and other important safety matters through daily briefings.

Department of the Interior administered lands burned on the Paradise Fire included the Rincon Indian Reservation, La Jolla Indian Reservation, San Pasqual Indian Reservation and Bureau of Land Management.

B. Reconnaissance Methodology and Results

November 1, 2003 Operation Specialists, working with tribal resources and BLM, assessed suppression-related impacts and assisted BAER team members with implementation of short-term mitigation treatments. Assessments were accomplished through the use of aerial reconnaissance and ground surveys performed in conjunction with other BAER team disciplines.

The fire perimeter was recorded by the IMT using GPS. Areas were surveyed on foot, vehicle, and from the air for additional rehabilitation needs. Suspected dozer line, hand line, drop points, helicopter bases and other suppression related damage was surveyed and mapped. Dozer line repairs already completed by the IMT were reviewed for compliance and additional recommendations were provided to the IMT.

Fire line rehabilitation standards were developed by CDF personnel assigned to the IMT. Treatments of suppression impacts throughout the fire perimeter are being repaired on all jurisdictions.

C. Findings

Impacts to resources from suppression were observed within the Paradise Fire area. Based on BAER team field surveys, the following have been documented by the OPS Specialists:

Jurisdiction	*Dozer line (Miles)	Hand line (Miles)	Helispot	Safety Zone	Drop Points	Burned Acres
BIA-La Jolla Res	7.7	3.4	1	2	1	1,478
BIA-Rincon Res					1	2,303
BIA-San Pasqual Res						1,421
BLM						3,442
Other	39.2	5.6	2	4	16	47,783
Totals	46.9	9.0	3	6	18	56,427

*Dozer lines varied from 1-3 blades wide throughout the fire area

California Department of Forestry and Fire Protection Rehabilitation specialists (CDF) reported that most of the suppression impacts had been repaired by hand crews and heavy equipment based on standards outlined in the rehabilitation agreement.

Suppression forces continue to monitor fire behavior and patrol 11.1 miles of dozer and hand line on the La Jolla Reservation. In addition, there are two breaks in the boundary fence (approximately 60 feet in length) that need to be repaired.

The bridge over the San Lois Rey River on the LaJolla reservation received damage by suppression vehicles traveling the Vallecitos road to access the fire.

Six newly planted native shade trees, with associated irrigation lines were damaged through suppression dozer line construction during initial attack. The shade trees are part of a Endangered Species Act mitigation made part of the construction of Harrah's casino, on the Rincon reservation.

Roadway guardrails along the North Canal Road on the San Pasqual Reservation burned, along with many traffic signs. See Appendix IV supporting documentation for specifics related to CDF repair agreement.

To view photographs of treatments and suppression-related damage see OPS photo documentation section of the plan.

OTAY FIRE

A. Background

The Otay Fire started on October 26, 2003, at approximately 1300 hours. The cause of the fire is still under investigation. The point of origin was determined to be Mine Canyon Road in the Otay Mountains. The fire burned in an area ranging in elevation from 200 to 3500 feet above sea level. The fire destroyed one residential structure and 5 out buildings. The fire was contained on October 28, 2003 and controlled on October 30, 2003. Fire consumed 44,698 acres of grass, chaparral and timber. The estimated final cost of suppressing the fire and suppression repair is over $400,000.

The BAER team was ordered for the Otay Fire and began work on November 1, 2003. Operations Section (OPS) assigned to the Otay Fire consisted of Dave Raney, Gavin Lovell and Maurice Williams. Upon arrival the fire was in control status and all suppression resources had been released from the incident. A concerted effort was made to contact appropriate agencies and personnel.

BLM officials gave a review of the fire to the BAER team at briefings the first few days. OPS coordinated aerial reconnaissance and logistical support for BAER team members. Individual specialists were informed of significant developments related to fire, weather and other important safety matters through daily briefings.

B. Reconnaissance Methodology and Results

The OPS specialists, with the assistance of BLM resource advisors, assessed suppression-related impacts and assisted BAER team members with implementation of short-term mitigation treatments. Assessments were accomplished through the use of aerial reconnaissance flights and ground surveys performed in conjunction with other BAER team disciplines.

The fire perimeter was recorded by the IMT using GPS and areas were surveyed on foot, vehicle and from the air for additional repair needs. All known or suspected locations of dozer line, hand line, drop points, helicopter landings spots and any other suppression related damage was surveyed and mapped. Suppression lines were repaired by the IMT, utilizing standards adopted in the approved Rehabilitation/Repair Plan. Compliance with the standards was confirmed through interviews with IMT staff and spot-checked by the BAER Team Operation Specialists.

C. Findings

Minimal fire suppression related impacts to resources were observed within the Otay Fire area. Based on the field surveys, the following have been documented:

Jurisdiction	Dozer line (Miles)	Hand line	Burned Acres
BLM			**21,912**
BIA-Jamul Res.	.08		
OTHER	2.27		22,786
TOTAL	2.35		44,698

As of 11/5/03 the California Department of Forestry and Fire Protection (CDF) reported that all known dozerline had been repaired by hand crews and heavy equipment based on standards

outlined in their agreements. See Appendix V supporting documentation for specifics related to the CDF repair agreement.

OLD FIRE

A. BACKGROUND

The Old Fire started on October 25, 2003 at approximately 0917 hours and quickly spread to 10,000 acres in the first burning period. The fire burned in an area ranging in elevation from 1,284 to 6,658 mean sea level. The fire destroyed 902 residences and 368 other structures and out buildings. The fire was contained on November 4, 2003, at 0600 hours with no projected control date, after consuming 91,281 acres of grass, chaparral and timber. The estimated final cost of suppressing the fire and suppression rehabilitation is approximately $36.8 million.

The National Interagency BAER team was ordered to the Southern California fires and began fieldwork on the Old Fire the first week of November 2003. Operations Section (OPS) personnel assigned to the Old Fire consisted of Chris Holbeck and John Perez. OPS had their first opportunity to visit the fire on November 7th. By this date the fire was in a contained status and heavily demobilization of resources was occurring.

Prior to conducting assessments of the fire, OPS contacted key tribal members on the San Manual Reservation and BLM staff in the Riverside office to obtain vital information on values at risk. Summaries of OPS field observations were given to BAER team members during nightly briefings. Field tours and aerial reconnaissance were arranged for BAER Team members in subsequent days. Because travel to the Old Fire was a logistical challenge, OPS organized group trips to avoid the heavy Los Angeles traffic. Travel time to the fire from BAER headquarters averaged 6 hours round-trip.

B. Reconnaissance Methodology and Results

The OPS specialists, with the assistance of resource advisors from the San Manual Indian Reservation and BLM, assessed suppression-related impacts and assisted BAER team members with implementation of short-term mitigation treatments. Reconnaissance flights and ground surveys were conducted in conjunction with other BAER team disciplines.

The fire perimeter was determined by the IMT using GPS, and then areas were surveyed on foot, vehicle and from the air for additional repair needs. In addition, all known or suspected locations of dozerline, handline, drop points, helispots, and any other suppression related damage was surveyed and mapped. Suppression dozerlines were repaired by the IMT. Compliance with BAER rehabilitation standards was spot-checked by the BAER Team Operation Specialists.

C. Findings

Minimal fire suppression related impacts to resources were observed on the 2,300acre BLM parcel within the Old Fire. The San Manual Indian Reservation was not impacted by suppression activities. Based on field surveys discussed previously, the following findings have been documented by BAER Team OPS Specialists: .1 mile of dozer line and 200 feet of boundary fence damaged by fire on BLM land. Repair of suppression line and fence is necessary to protect habitats in the riparian zone. As of 11/7/03, the IMT had repaired the fence. See Map Volume – Fire Suppression Impact Map, for location of fence.

Jurisdiction	*Dozer line (Miles)	Hand line (Miles)	Burned Acres
BIA-San Manual Res	0	0	746
BLM	0	0	2,347
Other			87,680
Totals	0	0	90,773

IV. RECOMMENDATIONS

A. Fire Suppression Repair

1. Management

All Fires

a. Dozer line Repair:

Situation: Suppression dozer line was constructed across several jurisdictions. Suppression impacts caused surface disturbance to soil and vegetation within the fire perimeter and adjacent areas.

Recommendation: Repair dozer line in a timely manner, in accordance with agency and BAER Plan standards. See Dozer line specification, Part F.

b. Hand line Repair

Situation: Suppression hand line was constructed across several jurisdictions. Suppression impacts caused varying amounts of surface disturbance to soil and vegetation within the fire perimeter and adjacent areas.

Recommendation: Repair hand line that has potential to cause resource damage from runoff and erosion. Repair in a timely manner, in accordance with agency and BAER Plan standards. See Handline Specification, Part F.

Cedar Fire

c. Incident command post (ICP) repair

Situation: The IMT set up an incident command post on the Viajas Indian Reservation, which resulted in severe compaction to soils and lose of ground cover at the Tipai Park.

Recommendation: Repair damage resulting from the ICP at the Tipai Park on the Viajas Indian Reservation in accordance with agency standards.

Otay Fire

d. Fence repair from suppression impacts

Situation: A back-fire was set that damaged 3.1 miles of fence. The fence is important for the protection of cultural sites and rare plant habitat from cattle and off-road-vehicles.

Recommendation: Reconstruct allotment boundary fence. Remove burned fence materials including wire.

Old Fire

e. Fence repair from suppression impacts

Situation: Construction of dozer line damaged a 200-foot section of fence on BLM protecting sensitive riparian habitat from off-road-vehicle use.

Recommendation: Reconstruct fence protecting rare species habitat and remove damaged fence including wire.

Paradise Fire

f. Road and Bridge Repair on the La Jolla Reservation

Situation: A bridge crossing the San Luis Rey River sustained damage to the wooden decking from dozer traffic. A crack in the concrete abutment on the north side of the bridge may have resulted from dozers utilizing this vehicle crossing. Approximately 2 miles of the Vallecitos Road, above the bridge, sustained damage to the inboard ditch and dirt road surface from dozens of crew buggies parking in the ditch and dozers constructing multiple containment lines in the area.

Recommendation: Bridge decking should be replaced. A certified bridge inspector should conduct a survey of the bridge for structural integrity. A road grader or similar earth moving equipment should reestablish the inboard ditch along the full length of the road. The road surface should be graded to remove the ruts resulting from heavy fire traffic.

g. T&E Mitigation:

Situation: Six newly planted native shade trees, with associated irrigation lines were damaged through suppression dozer line construction during initial attack. The shade trees are part of a Endangered Species Act mitigation made part of the construction of Harrah's casino, on the Rincon reservation.

Recommendation: Replace six native shade trees and associated irrigation lines consistent with the original casino mitigation plan.

2. Monitoring

None

B. Emergency Stabilization

1. Management

a. Paradise Fire road safety

Situation: Fire consumed wooden support posts along 1570 feet of guardrail on the San Pasqual Reservation. Also burned, were 15 to 20 road safety signs.

Recommendation: Install wooden posts and attach guardrail. Remove remains of burned road signs and replace them.

b. Otay Fire road safety

Situation: The fire burned safety mirrors and carsonite delineators along the Otay Truck Trail creating an unsafe driving situation.

Recommendation: Fire damaged mirrors and delineators should be replaced in accordance with agency standards.

2. Monitoring

None

C. Rehabilitation

1. Management

None

2. Monitoring

None

D. Management Recommendations (non-specification related)

1. Ensure rehabilitation specifications are clearly understood by new crews assigned to treatment work. Provide a copy of the specification and diagram to each crew boss or supervisor assigned to rehabilitation.
2. Complete fire suppression related specifications before the suppression account is closed.
3. Ensure a smooth transition between BAER Ops personnel and the implementation leaders.
4. Provide for safety of personnel assigned to implementation of the Emergency Stabilization and Rehabilitation Plan.
5. Map additional suppression related damage found, document and repair to agency and BAER Plan standards.

V. REFERENCES

VI. CONSULTATIONS

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INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

APPENDIX II. ENVIRONMENTAL COMPLIANCE DOCUMENTATION

- **ENVIRONMENTAL ASSESSMENT**
- **FINDINGS OF NO SIGNIFICANT IMPACT**

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN
2003 SOUTHERN CALIFORNIA FIRES
San Diego and San Bernardino Counties
Environmental Compliance Considerations and Documentation

A. FEDERAL, STATE, AND PRIVATE LANDS ENVIRONMENTAL COMPLIANCE RESPONSIBILITIES

All projects proposed in the 2003 Southern California Interagency Burned Area Emergency Stabilization and Rehabilitation Plan that are prescribed, funded, or implemented by Federal agencies on Federal, State, or private lands are subject to compliance with the *National Environmental Policy Act* (NEPA) in accordance with the guidelines provided by the *Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508)*. This Appendix documents the Interagency Burned Area Emergency Response (BAER) Team considerations of NEPA compliance requirements for prescribed emergency stabilization and monitoring actions described in this plan for areas affected by the 2003 Southern California Fires in San Diego and San Bernardino Counties.

This plan identifies specific emergency stabilization, rehabilitation, and monitoring actions designed to mitigate damages to resources as a result of the 2003 Southern California Fires and associated fire suppression activities. The Bureau of Indian Affairs, Bureau of Land Management, and U.S. Fish and Wildlife Service must complete separate NEPA analyses and compliance for and fire response activities not addressed in this plan.

This plan has been developed by an Interagency BAER Team comprised of representatives from the: Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Indian Affairs (BIA), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), and private contractors. The Team consulted with numerous other agencies, organizations, and individuals with subject matter expertise applicable to the proposed treatments (see consultation section below).

Agency Specific Guidance: This NEPA documentation has been developed in accordance with the following agency specific guidelines.

Bureau of Indian Affairs: Emergency stabilization and rehabilitation actions proposed on Barona, Capitan Grande, Iñaja-Cosmit, La Jolla, Rincon, San Manuel, San Pasqual, Santa Ysabel, Sycuan, and Viejas Tribal Trust lands will comply with NEPA compliance guidelines contained in the Bureau of Indian Affairs (30BIAM) regulations and guidelines.

Bureau of Land Management: Emergency rehabilitation actions proposed on Bureau of Land Management lands, involving the agencies permitting, funding, or implementation, must comply with regulations set forth in the *Department of the Interior Manual Part 516 (DM 6, Appendix 5)*.

U.S. Fish and Wildlife Service: Emergency stabilization, rehabilitation and monitoring actions proposed on will comply with U.S. Fish and Wildlife Service, NEPA Guidelines, Part 516 (DM 6, Appendix 1).

B. RELATED PLANS AND CUMULATIVE IMPACTS ANALYSIS

Southern California Agency Fire Management Plan: The BAER Team Environmental Protection Specialists reviewed the Fire Management Plan and associated Environmental Impact Statement, and in consultation with the Bureau of Indian Affairs, Pacific Region

NEPA coordinator, determined that actions proposed in the 2003 Southern California Burned Area Emergency Stabilization and Rehabilitation Plan are consistent with the management objectives established in the FMP for emergency stabilization and rehabilitation.

South Coast Resource Management Plan and Environmental Impact Statement 1994: The South Coast RMP provides management guidance and identifies land use decisions to be implemented by the Bureau of Land Management for the public lands in Los Angeles, Orange, and western San Diego, San Bernadino and Riverside counties.

Multiple Species Conservation Program (MSCP) Plan 1998: The MSCP is habitat conservation

Plan (HCP) designed to protect the biodiversity of San Diego County and associated habitats.

The MSCP plan covers 85 plant and animal species in a preserve area of 170,000 acres. The

Bureau of Land Management and US Fish and Wildlife Service administer several core areas of the MSCP preserve. The MSCP serves as a habitat conservation plan pursuant to Section 10 (a) (1)(B) of the Endangered Species Act.

San Diego National Wildlife Refuge: The BAER Team Environmental Protection Specialist reviewed the approved San Diego National Wildlife Refuge Land Protection Plan, Environmental Assessment.

Cumulative Impact Analysis*:* Cumulative effects are the environmental impacts resulting from the incremental impacts of a proposed action, when added to other past, present, and reasonably foreseeable future actions, both Federal and nonfederal. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The emergency stabilization and rehabilitation treatments for the watersheds affected by the 2003 Southern California Fires, as proposed in this plan, do not result in an intensity of impact (i.e. major ground disturbance, etc.) that would cumulatively constitute a significant impact on the quality of the environment. The treatments are consistent with the above jurisdictional management plans and associated environmental compliance documents of the BIA, BLM, USFWS, and categorical exclusions listed below.

No direct or indirect unavoidable adverse impacts to the biological or physical environment would result from the implementation of this 2003 Southern California Burned Area Emergency Stabilization and Rehabilitation Plan. The implementation of emergency watershed stabilization and rehabilitation treatments proposed in the plan would not result in any adverse effect on the burned area or areas downstream. Conversely, implementation of the plan would be expected to result in a cumulatively beneficial effect by reducing erosion and improving water quality within the burned area.

C. APPLICABLE LAWS AND EXECUTIVE ORDERS

This section documents consideration given to the requirements of specific environmental laws in the development of the 2003 Southern California Burned Area Emergency Stabilization and Rehabilitation Plan. Specific consultations initiated or completed during development and implementation of this plan are also documented. The following executive orders and legislative acts have been reviewed as they apply to the 2003 Southern California Burned Area Emergency Stabilization and Rehabilitation Plan.

1. **National Historic Preservation Act (NHPA).** The BAER Team Cultural Resources Specialists have initiated necessary consultation with the California State Historic Preservation Office (SHPO) regarding activities proposed within the 2003 Southern California Burned Area Emergency Stabilization and Rehabilitation Plan.

2. **Executive Order 11988, Floodplain Management.** All proposed treatments are in compliance with this order.

3. **Executive Order 11990, Protection of Wetlands.** All proposed treatments are in compliance with this order.

4. **Executive Order 12372, Intergovernmental Review.** Coordination and consultation is ongoing with affected Tribes, Federal, and local agencies. A copy of the plan will be disseminated to all affected agencies.

5. **Executive Order 12892, Federal actions to address Environmental Justice in Minority and Low-Income Populations**. All Federal actions must address and identify, as appropriate, disproportionately high and adverse human health or low-income populations, and Indian Tribes in the United States, The BAER Team has determined that the actions proposed in this plan will result in no adverse human health or environmental effects for minority or low-income populations and Indian Tribes.

6. **Endangered Species Act.** The BAER Team wildlife biologist and vegetation specialist have consulted with the U.S. Fish and Wildlife Service regarding actions proposed in this plan and potential affects on Federally listed species and have determined that there is no effect. Individual agencies are responsible for continued consultations during plan implementation.

7. **Clean Water Act.** All proposed treatments are in compliance with this Act. Emergency stabilization and rehabilitation measures proposed are necessary to maintain clean water within the burn and adjacent areas. Long-term impacts are considered beneficial to water quality.

8. **Clean Air Act.** Federal Ambient Air Quality Primary and Secondary Standards are provided by the National Ambient Air Quality Standards, as established by the U.S. Environmental Protection agency (EPA) (Clean Air Act, 42 U.S.C. 7470, et seq., as amended). The BAER Team has determined that treatments prescribed in the 2003 Southern California area will have short-term minor impacts to air quality that would not differ significantly from routine land use practices for the area. Long-term treatments proposed in the plan would be expected to have a beneficial impact to air quality through stabilization of ash and soils within the 2003 Southern California area.

9. **Wilderness Act.** The appropriate BAER Team resource and operations specialists have consulted with the Bureau of Land Management regarding actions proposed in this plan and potential effects to the Otay Mountain Wilderness. No treatments or emergency stabilization actions are proposed in the wilderness. Monitoring for invasive plants and related treatments outside the wilderness would have long term beneficial effects on wilderness values.

D. APPLICABLE AND RELEVANT CATEGORICAL EXCLUSIONS

Accept for chemical treatment of noxious weeds and area closures by the Bureau of Land Management, all treatment actions proposed in this plan are Categorically Excluded from further environmental analysis as provided for in the Department of Interior Manual Part 516. All applicable and relevant Department and Agency Categorical Exclusions are listed below. Categorical Exclusion decisions were made with consideration given to the results of required emergency consultations completed by the BAER Team and documented in Section E below.

Applicable Department of the Interior Categorical Exclusions

Part 516 DM 2, App. 1.1	Personnel actions and investigations and personnel services contracts.
Part 516 DM 2, App. 1.4	Law enforcement and legal transactions, including such things as arrests, investigations, patents, claims, legal opinions, and judicial activities including their initiation, processing, settlement, appeal, or compliance.
Part 516 DM 2, App. 1.6	Non-destructive data collection, inventory (including field, aerial and satellite surveying and mapping), study, research and monitoring activities.
Part 516 DM 2, App. 1.7	Routine and continuing government business, including such things as supervision, administration, operations, maintenance and replacement activities having limited context and intensity; e.g. limited size and magnitude or short-term effects.
Part 516 DM 2, App. 1.10	Policies, directives, regulations and guidelines of an administrative, financial, legal, technical or procedural nature; or the environmental effects of which are too broad, speculative or conjectural to lend themselves to meaningful analysis and will be subject later to the NEPA process, either collectively or case-by-case.
Part 516 DM 2, App. 1.11	Activities which are educational, in formational, advisory or consultative to other agencies, public and private entities, visitors, individuals or the general public.

Applicable Bureau of Indian Affairs Categorical Exclusions

Part 516 DM 6 App. 4.4 H (5)	Approval of Fire Management Planning Analysis detailing emergency fire suppression activities.
Part 516 DM 6 App. 4.4 H (6)	Approval of emergency and range rehabilitation plans when limited to environmental stabilization on less than 10,000 acres and not including approval of salvage sales of damaged timber.
Part 516 DM 6 App. 4.4 L (4)	Installation of fencing, signs, pavement markings, small passenger, shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur.

Part 516 DM 6 App. 4.4 L (5)	Emergency repairs under 23 U.S.C. 125.
Part 516 DM 6 App. 4.4 M (1)	Data gathering activities such as inventories, soil and range surveys, timber cruising, geological, geophysical, archaeological, paleontological and cadastral surveys.
Part 516 DM 6 App. 4.4 M (2)	Establishment of non-disturbance environmental quality monitoring programs and field monitoring stations including testing services.

Applicable Bureau of Land Management Categorical Exclusions

516 DM 6, App. 5.4 C (3)	Seeding or reforestation of timber sales or burn areas where no chaining is done, no pesticides are used, and there is no conversion of timber type or conversion of non-forest to forest land. Specific reforestation activities covered include: seeding and seedling plantings, shading, tubing (browse protection), paper mulching, bud caps, ravel protection, application of non-toxic big game repellant, spot scalping, rodent trapping, fertilization of seed trees, fence construction around out-planting sites, and collection of pollen, scions and cones.
516 DM 6, App. 5.4 G (2)	Installation of routine signs, markers, culverts, ditches, water bars, gates, or cattleguards on/or adjacent to existing roads.
516 DM 6, App. 5.4 G (3)	Temporary closure of roads.
516 DM 6, App. 5.4 G (4)	Placement of recreational, special designation or information signs, visitor registers, kiosks and portable sanitation devices.
516 DM 6, App. 5.4 H (8)	Installation of minor devices to protect human life (e.g. grates across mines).
516 DM 6, App. 5.4 H (10)	Removal of structures and materials of non-historical value, such as abandoned automobiles, fences, and buildings, including those built in trespass and reclamation of the site when little or no surface disturbance is involved.

Applicable U.S. Fish and Wildlife Service Categorical Exclusions

(1) Research, inventory, and information collection activities directly related to the conservation of fish and wildlife resources which involve negligible animal

mortality or habitat destruction, no introduction of contaminants, or no introduction of organisms not indigenous to the affected ecosystem.

(3) The construction of new, or the addition of, small structures or improvements, including structures and improvements for the restoration of wetland, riparian, instream, or native habitats, which result in no or only minor changes in the use of the affected local area. The following are examples of activities that may be included.

i. The installation of fences.
ii. The construction of small water control structures.
iii. The planting of seeds or seedlings and other minor revegetation actions.
iv. The construction of small berms or dikes.
v. The development of limited access for routine maintenance and management purposes.

(5) Fire management activities including prevention and restoration measures, when conducted in accordance with departmental and Service procedures.

E. CONSULTATIONS

Bureau of Indian Affairs
Stephen Fillmore, Fuels Specialist, Southern California Agency
Jay Hinshaw, Regional BAER Coordinator / Forestry NEPA Coordinator
Lisa Northrop, Natural Resource Manager, Southern California Agency
John Rydzik, Regional Environmental Scientist, Pacific Region
Richard Gundry, Hydrologist, Southern California Agency

Bureau of Land Management
Dianna Brink, ESR Coordinator
Greg Hill, Planning/Wilderness

California State Historic Preservation Office
Hans Kreutzberg, Supervisor (SHPO), Cultural Resource Program

U.S. Fish and Wildlife Service
Richard Hadley, Assistant Refuge Supervisor, Southern California/Nevada Refuges
Mendel Stewart, Project Leader, San Diego National Wildlife Refuge Complex
Slader Buck, Deputy Project Leader, San Diego National Wildlife Refuge Complex
Bill Molumby, Fire Management Officer, San Diego National Wildlife Refuge Complex
Larry Wade, Deputy Fire Management Officer, San Diego National Wildlife Refuge Complex
Val Urban, Refuge Manager, San Diego National Wildlife Refuge
Carla Burnside, Program Manager, Forestry/Natural Resources Program

NEPA DOCUMENTATION AND DECISION

The Categorical Exclusions for the treatments on the Indian Reservations are complete and signed and can be found on the following pages. The Bureau of Land Management Environmental Assessment covers emergency stabilization on the Otay Wilderness.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
PALM SPRINGS-SOUTH COAST FIELD OFFICE

ENVIRONMENTAL ASSESSMENT
EA Number CA-660-04-20

DATE: November 2003

TITLE/PROJECT TYPE: Burned Area Emergency Stabilization And Rehabilitation Plan: Otay, Cedar, Paradise, and Old Fires

BLM OFFICE: Palm Springs-South Coast Field Office
690 W. Garnet Ave., PO Box 581260
North Palm Springs, CA 92258-1260

APPLICANT/PROPONENT:
Department of the Interior Burned Area Emergency Response Team:
National Park Service
Bureau of Indian Affairs
Fish and Wildlife Service
U.S. Forest Service
Bureau of Land Management

LOCATION OF PROPOSED ACTION: Public lands in the South Coast planning area and California Desert Conservation Area affected by the Otay, Cedar, Paradise, and Old Fires, in San Diego and San Bernardino Counties, California. See attached maps.

LAND USE PLAN CONFORMANCE and Other Regulatory Compliance:
In accordance with Title 43 Code of Federal Regulations 1610.5-3, the proposed action and alternatives are in conformance with the following approved land use plans: *South Coast Resource Management Plan* (1994) and the *California Desert Conservation Area Plan* (1980 as amended).

The Wildlife and Vegetation Assessments portion of the Burned Area Emergency Stabilization and Rehabilitation Plan (the DOI BAER Plan) documents the effects of the fires, suppression activities, proposed stabilization and rehabilitation work, and potential post fire flooding and sediment delivery to all Federally-listed threatened and endangered species and their habitat. An Emergency Section 7 Consultation was initiated with the U.S. Fish and Wildlife Service on October 29, 2003, and is incorporated in the DOI BAER Plan and in this EA by reference. Approval of the interagency Burned Area Emergency Stabilization and Rehabilitation Plan by the Department of the Interior and the U.S. Fish and Wildlife Service concludes the consultation process. BLM would be responsible for initiating additional consultations on any actions not covered by the DOI BAER Plan. BLM would continue to coordinate with the U.S. Fish and Wildlife Service upon implementation of the DOI BAER Plan, such as for any proposed herbicide applications, to ensure continued compliance with the Endangered Species Act of 1973 as amended.

Consultation with the California State Historic Preservation Office (SHPO) was initiated by the BAER team and is incorporated in this EA by reference. Additional consultations with the SHPO will be conducted prior to any site- specific treatments on BLM-administered lands in Sycamore Canyon.

Repair and maintenance of the Otay Mountain and Minnewawa Truck Trails was analyzed under the Environmental Analysis and Decision Record (CA-660-96-52) for the *Otay Mountain Truck Trail Improvement Project* (1996), the EA and Decision Record (CA-660-00-15) for *Border Patrol Road*

Reflector Installation (2000) and the Categorical Exclusion Record (CX CA-660-02-44) for *Otay Mountain Truck Trail Traffic Safety Mirrors* (2002).

No treatments or emergency stabilization actions are proposed in wilderness. Any subsequent monitoring actions would be subject to the Otay Mountain Wilderness are subject to the *Wilderness Act of 1964* and the *Otay Mountain Wilderness Act of 1999*.

NEED FOR THE PROPOSED ACTION

The Otay, Cedar, Old and Paradise fires burned over 36,000 acres of BLM managed public lands between October 25 and November 9, 2003. These fires were located in San Diego and San Bernardino Counties, California. The Department of the Interior (DOI) ordered an interagency Burned Area Emergency Response (BAER) Team to assess the damage to public lands, wildlife refuges, and Indian Reservations, and to prepare a Burned Area Emergency Stabilization and Rehabilitation Plan.

This programmatic environmental assessment analyzes the direct, indirect and cumulative impacts of the proposed Burned Area Emergency Stabilization and Rehabilitation Plan on BLM administered public lands affected by the Otay, Cedar, Paradise and Old Fires in October-November of 2003.

The BLM administers over 70,000 acres of public lands in western San Diego County, including approximately 28,000 acres within the San Diego Multiple Species Conservation Program (MSCP) planning area. Most of these lands lie along the US-Mexico border within close proximity to the San Diego-Tijuana metropolitan area. These public lands include the Otay Mountain Wilderness, National Register cultural sites, and other special designations. The BLM coordinates with city and county governments, the USFWS, and California Department of Fish and Game (CDFG) to manage these public lands to meet the goals of the MSCP plan. The Otay/Kuchamaa Cooperative Management Area was identified as a core area within the MSCP and links public lands at Otay Mountain and Cedar Canyon with public lands at Little Tecate Peak and Tecate Peak. This environmental assessment includes proposed mitigation measures to ensure implementation of the Plan is consistent with these land use designations and local multi-jurisdictional conservation plans, such as the MSCP.

DESCRIPTION OF THE PROPOSED ACTION and ALTERNATIVES

A. Proposed Action

BLM proposes to implement the specifications and management recommendations listed in the Burned Area Emergency Stabilization and Rehabilitation Plan (copy attached) prepared by the DOI interagency BAER team for the Otay, Cedar, Paradise and Old Fires in November of 2003.

The DOI BAER Plan includes the following actions on public lands:

- Remove 20 undersized culverts on the Otay Mountain and Minnewawa Truck Trails, and replace with rolling dips and install GeoMesh fabric and road base.
- Clear and remove debris and sediment from Otay Mountain and Minnewawa Truck Trails after post-fire major storm events, using front-end loaders and dump trucks.
- Remove and replace 245 fiberglass safety reflector posts and 10 safety mirrors along 15 miles of the Otay Mountain and Minnewawa Truck Trails.
- Replace three miles of fencing and one gate along State Highway 94, between Otay Lakes Road and Dulzura.
- Aerial seeding, using native seed, on 2,804 acres on Rodriguez Mountain and Lower Hellhole Canyon watershed, to stabilize and protect the San Luis Rey River Watershed.
- Revegetation of approximately 250 acres at the mouth of Sycamore Canyon, and on bulldozer line on Clark Ranch, to prevent site degradation, control invasive species, and restore native plant communities. Treatment includes control of invasive/non-native species through application of herbicides, mechanical and hand seeding of native plant species, and monitoring of invasive species.

?? Spot treatments, with herbicide, of invasive/non-native species over approximately 267 acres along the Otay Mountain and Minnewawa Truck Trails.
?? Vegetation monitoring, for effectiveness of treatments, over approximately 3,600 acres.
?? Monitoring of federally listed endangered Quino checkerspot butterfly at six sites.
?? Temporary closure of the BLM-administered public lands and roads affected by the Otay Fire for two years from the date of control, October 30, 2003 – October 30, 2005, to motorized vehicles, encompassing approximately 3,425 acres. These areas would remain open to limited public access by foot, but would be closed to target shooting, camping, and campfires. The closure is for protection of public health and safety and to implement and protect the above treatments. If treatments are successful, BLM may consider opening these areas sooner than two years.

This analysis is intended to supplement emergency stabilization actions covered under the Categorical Exclusion and NEPA documentation prepared by the interagency BAER Team. Implementation of actions involving application of herbicides would require separate environmental analysis and NEPA documentation, per BLM policy. Actions in Sycamore Canyon would also require site specific cultural review due to the presence of documented sites, which may be eligible for the National Register of Historic Places.

B. No Action Alternative

BLM has the option to refuse funding and not implement the proposed Burned Area Emergency Stabilization and Rehabilitation Plan. There would be no additional repair to BLM roads beyond the minimum provided by the U.S. Border Patrol in accordance with their Interagency Agreement with the BLM. Control and monitoring of invasive/non-native plants in burned areas and revegetation of native plants would not occur. Vegetation would be allowed to regenerate through natural processes only. No additional monitoring of T&E species would occur. Repair of fences, gates, and signing would be deferred until additional funding through MLR is authorized. No additional closures would be implemented.

AFFECTED ENVIRONMENT

A more complete description of the affected environment is provided in the Resource Assessment sections of the attached DOI BAER Plan. A summary description of the affected BLM lands is provided below by fire area.

Otay Fire. Approximately 21,925 acres of BLM-administered public lands, out of a total of 44,699 acres affected, burned in the Otay Fire in southwestern San Diego County. Otay Mountain is part of the San Ysidro Mountains, a rugged coastal range that lies on both sides of the U.S.-Mexico border. The Otay Mountain Wilderness protects stands of Tecate Cypress (*Cupressus forbesii)*, Mexican flannel bush (*Fremontodendron mexicanum)* and other rare and T&E plants found only in this area. The predominant vegetation is coastal sage scrub and chaparral with oak and sycamore stands found in the canyon bottoms and valleys. All public lands affected by the Otay Fire are designated as critical habitat for the federally listed Quino checkerspot butterfly.

Cedar Fire. This catastrophic fire burned 280,059 total acres through an area of rapidly increasing urbanization, located in central San Diego County, sweeping from Julian westward through the Miramar Marine Corps Air Station near the coast. Approximately 4,854 acres of BLM-administered public land burned in the Cedar Fire, in steep, rugged terrain covered with coastal sage scrub and chaparral communities.

Paradise Fire. This fire started near Rodriguez Peak southeast of Rincon, in San Diego County and grew to 56,428 acres. Approximately 3,442 acres of BLM-administered lands burned in the Paradise Fire, in steep, rugged terrain covered with coastal sage scrub and chaparral communities.

Old Fire. The Old Fire burned 90,773 acres in and around the San Bernardino Mountains, in southwestern San Bernardino County. Vegetation in the burn area consisted of chaparral on the

lower south facing slopes, mixed-conifer oak forests in the upper elevations, and desert scrub and riparian areas on the north facing slopes. Approximately 2,347 acres of the burn area is administered by BLM, on the high desert side of the San Bernardino Mountains, with pinyon-juniper and Joshua tree woodland communities.

ENVIRONMENTAL CONSEQUENCES

A. Critical Elements

The following table summarizes potential impacts to various elements of the human environment, including the "critical elements" listed in the BLM Manual H-1790-1, Appendix 5 as amended. Elements for which there are no impacts will not be discussed further in this document.

Environmental Element	Proposed Action	No Action Alternative
Air Quality	No impacts	May adversely affect
ACEC's	Beneficial impacts	May adversely affect
Cultural Resources	Beneficial impacts	May adversely affect
Native American Concerns	Beneficial impacts	May adversely affect
Farmlands	No impacts	No impacts
Flood Plains	No impacts	May adversely affect
Minerals	No impacts	No impacts
T&E Animal Species	Beneficial impacts	No impacts
T&E Plant Species	Beneficial impacts	No impacts
Invasive, Non-native Species	Beneficial impacts	May adversely affect
Wastes (hazardous/solid)	No impacts	May adversely affect
Water Quality (surface and ground)	Beneficial impacts	May adversely affect
Wetlands/Riparian Zones	Beneficial impacts	May adversely affect
Wild and Scenic Rivers	No impacts	No impacts
Wilderness	Beneficial impacts	May adversely affect
Environmental Justice	No impacts	No impacts
Visual Resource Mgmt.	No impacts	May adversely affect
Energy Policy	No impacts	No impacts

B. Discussion of Impacts

1. Proposed Action:

Otay Mountain Road Repairs

Repair and maintenance of the Otay Mountain and Minnewawa Truck Trails, including replacement of mirrors, signing, and reflector posts, is covered under existing NEPA analysis and documentation. For complete descriptions see EA CA-660-96-52 (*Otay Mountain Truck Trail Improvement Project*), EA CA-660-00-15 (*Border Patrol Road Reflector Installation*), CX CA-660-02-44 (*Otay Mountain Truck Trail Traffic Safety Mirrors*), and the CX for the BAER Plan. Under the proposed action, there would be no additional impacts beyond those analyzed in the above documents. Stipulations in the above documents would continue to apply and are hereby incorporated by reference.

Aerial Seeding/Revegetation and T&E Monitoring

Aerial seeding of a native seed mix will help to reduce soil erosion and sedimentation, maintain water quality, and minimize encroachments by invasive species. Aerial seeding on BLM lands in the San Luis

Rey River Watershed would be conducted as part of a larger prescription by the Bureau of Indian Affairs under separate contract and under an MOU with the BLM. For detailed description of seed species and application rates, see the specifications and resource assessment sections in the BAER Plan.

Monitoring is covered under Departmental Categorical Exclusions, 516 DM 2, Appendix 1, 1.6, *Non-destructive data collection.*

Control of Invasive Species

Control of invasive species would be by application of glysophate or similar herbicide upon emergence of non-native invasive species. Herbicide would be applied by backpack sprayer to individual invasive species along the Otay Mountain and Minnewawa Truck Trails, and near towers or other facilities along the roads. Spot treatment would reduce or eliminate impacts to sensitive T&E species. Upon emergence of invasive species, a truck mounted boom sprayer would apply herbicide to 250 acres in Sycamore Canyon. Three miles of fencing and gates would be repaired and replaced along State Highway 94, to control access to seeded areas. These treatments require separate environmental analysis and consultation with the USFWS. A programmatic Environmental Impact Statement (EIS) for herbicide treatments on BLM land in California is addressed in the California Vegetation Management EIS (1988) and the Final EIS for Vegetation Treatment on BLM Lands in Thirteen Western States (May, 1991). These EIS's are incorporated into this EA by reference.

Seeding in Sycamore Canyon would be by mechanical drill, and by hand where cultural sites are present. Mechanical drilling has a higher seeding success, as well as further reducing annual invasive weeds. Two recorded sites occur in the project area and may be eligible for inclusion on the National Register of Historic Places. Cultural resource review and consultation with the State Historic Preservation Office would be required prior to implementation of proposed treatments.

Area/Vehicle Closures

Temporary closure of roads is covered under Department of the Interior Categorical Exclusion 516 DM 6, Appendix 5, G. (3) *Temporary closure of roads.* The Otay Mountain Truck Trail and the White Cross Road are used primarily by the US Border Patrol for access to border areas as part of their mission of surveillance and interdiction. Patrol agents use the roads on a daily basis. The closure does not apply to law enforcement and other authorized uses, such as access to communication sites. The closure would have no effect on Border Patrol operations, fire prevention and suppression, or holders of valid existing rights. These roads receive very little public or recreation use, less than 1,000 visitors per year. Uses include driving for pleasure, mountain bike riding, hiking, and photography. The closure would eliminate some of these uses (access by motorized vehicles and bicycles) for the duration of the temporary closure.

Marron Valley Road provides access to private property, the Otay Mountain Truck Trail, and Marron Valley. Lands in Marron Valley are owned by the San Diego Water Department and are not open to the public. Only about .75 mile of road on public land is affected by the closure. Due to gates controlling access to private property, the public land in this area receives little or no recreation use. The closure would not affect Border Patrol, law enforcement, fire protection, or private property owners.

Lands in Sycamore Canyon and the Clark Ranch area have been purchased since 1999 as part of the MSCP Preserve System. Since purchase of these areas, use of the roads has increased, particularly by local residents for horseback riding, OHV riding, target shooting, and hunting. Roads on these lands have not been designated and are not addressed in the South Coast RMP. Due to the relatively flat terrain and rolling hills in this area, and the loss of vegetation, the potential for travel off road has increased and has been observed. Numerous cultural sites, including lithics, bedrock milling sites, and historic stone walls, are exposed and vulnerable to looting, vandalism, and impacts from driving off road. Prescribed vegetation treatments and seedings would be also be vulnerable to driving off road. Impacts to cultural and natural resources would be positive from a closure. There would be a loss of some recreation opportunities (OHV and other motorized access and target shooting) from a closure.

2. No Action Alternative:

Otay Mountain Road Repairs

The U.S. Border Patrol would continue to maintain the Otay Mountain and Minnewawa Truck Trails, however, the 20 undersized culverts would not be replaced with rolling dips. Not replacing the undersized culverts could result in insufficient drainage and runoff of debris during storm events. The undersized culverts would not accommodate the increased runoff due to loss of vegetation. The existing culverts may fail and be washed out, resulting in loss of access to Otay Mountain and unsafe conditions on the roads. Increased erosion would have significant impacts to soils, vegetation, and other resources in the Otay Mountain Wilderness and Cedar Canyon ACEC. Unsafe road conditions would put BLM, Border Patrol, and other users of these roads at risk.

Aerial Seeding/Revegetation and T&E Monitoring

Under the No Action Alternative, aerial seeding, revegetation, or monitoring for T&E species would not occur on BLM lands. The San Luis Rey River watershed and homes and water sources on the La Jolla, Rincon, and San Pasqual Indian Reservations would be at risk from landslides, erosion, and associated impacts. Air and water quality would be impacted from loose ash and soils blown off-site during Santa Ana wind conditions. Visual resources would be impacted from loss of soil stabilization and slower revegetation. Lack of monitoring for T&E species, particularly the Quino checkerspot butterfly, could impact recovery efforts for this species.

Control of Invasive Species

Under the No Action Alternative, control and monitoring of invasive species would not occur on BLM lands. Non-native invasive species would have an increased opportunity to spread on public lands, impacting efforts to manage and preserve coastal sage scrub and associated native species. Non-native invasive species may increase the occurrence of fire and limit the ability of native plant and animal species to recover, including T&E species. The resource values of the Otay Mountain Wilderness and Cedar Canyon ACEC would be negatively impacted.

Area/Vehicle Closures

Under the No Action Alternative, no additional closures of roads or public lands would occur. Visitors would be at risk from falling rocks, debris, or landslides on the Otay Mountain and Minnewawa Truck Trails. Wilderness resources, including vegetation and T&E species, would be at risk from increased off road access due to the lack of vegetation, which previously prevented off road travel. In the Sycamore Canyon and Clark Ranch areas, T&E species, cultural resources, and revegetation and invasive species control efforts would be at increased risk from OHV and other off road vehicle activity. Watersheds and riparian areas would be impacted from increased erosion from uncontrolled OHV use. Target shooting, camping, and campfires would also have the potential to impact the above resources and stabilization efforts.

C. Mitigation Measures

Otay Mountain Road Repairs

The standard stipulations included in the existing NEPA documents would continue to apply and are incorporated by reference. In addition, the Border Patrol, the BLM, and contractors would be required to inspect sources of gravel and other road base material for possible contamination with invasive weeds. Road grading and maintenance equipment would be washed and cleaned of possible invasive weeds and seeds prior to maintenance activities.

Aerial Seeding/Revegetation and T&E Monitoring

Seed mixes are to be native species and appropriate for the soil type and slopes. No further mitigation for seeding and monitoring is required.

Control of Invasive Species

Use of herbicides would require additional NEPA analysis and further consultation with the U.S. Fish and Wildlife Service. Application of herbicides requires training and certification through BLM protocols. Mitigation for treatments would include flagging to avoid known Quino checkerspot butterfly occurrence sites, spraying when there is no wind to reduce drift of herbicide into Quino habitat, and spot treatments by hand along roads to avoid native species.

For the recorded cultural sites at Sycamore Canyon, herbicide and seeding treatments would follow the following mitigation measures. All vehicles, including all-terrain vehicles (ATV) used for herbicide spraying or seeding, must stay on existing roads. Beyond the reach of the boom on the herbicide vehicles, herbicide application must be done with a hose or backpack sprayer. Seeding may only be done on foot around recorded cultural sites. No seeding via mechanical drilling would be allowed within recorded sites.

Area/Vehicle Closures

To mitigate for loss of recreational opportunities during an emergency closure, several sites will be identified where the public can park and access public lands by foot for hiking, nature study, and photography. The public will be encouraged to stay on established roads and not walk in burned and recovering areas. Access for hunting would be coordinated with the California Department of Fish and Game. Signing would be posted with supplementary rules and interpretive messages to encourage compliance.

There is a large cultural site at the gated access (the so-called “Pink Gate”) to Sycamore Canyon. Cal Trans initially recorded the cultural site prior to widening of Highway 94. In order to minimize any further disturbance to the site, gate and fence replacement would comply with the following mitigation measures. All vehicles, including all-terrain vehicles (ATV) must stay on existing roads. Gate/fence replacement will only occur within existing disturbed areas. A maximum 18-inch diameter auger mounted on a vehicle may be used in the existing disturbed areas. A qualified archaeologist would be on site during gate/fence replacement. Signage would only be installed using carsonite or metal posts that can be pounded by hand. No digging of holes or concrete work would be allowed for signage.

D. Residual Impacts

1. **Proposed Action**

There would be no residual impacts to the proposed actions covered under the Categorical Exclusion for the BAER Plan. Residual impacts to proposed actions involving applications of herbicide and drill seeding would be analyzed in a separate NEPA document for those site-specific actions.

2. **No Action Alternative**

Residual impacts from the No Action Alternative would include increased risk of erosion, impacts to watersheds, increased safety hazards to visitors and authorized users from landslides and falling debris, spread of invasive non-native plants, and impairment of recovery efforts for T&E species.

E. Cumulative Impacts

1. **Proposed Action**

The long-term cumulative impacts from the Proposed Action would be beneficial to all resources on public lands. Recovery of T&E species, coastal sage scrub and chaparral vegetation communities, wilderness resources, visual resources, and watersheds would be enhanced. Long term opportunities for hiking, nature study, photography, and other low impact recreation uses would be improved from recovery and stabilization efforts.

2. **No Action Alternative**

The long term cumulative impacts from the No Action Alternative include continued risk of erosion, impacts to watersheds, spread of invasive non-native plants, and impairment of recovery efforts for T&E species.

PERSONS/AGENCIES CONSULTED:

Carla Burnside - Archaeologist, USFWS/BAER Team
Karen Hayden - Wildlife Biologist, USFS/BAER Team
John DiGregorio - Botanist, USFWS/Carlsbad ESO
Clay Howe – Fire Prevention Specialist, BLM/PSSC FO
Ron Woychak – Fire Management Officer, BLM/PSSC FO
Department of Interior Interagency Burned Area Emergency Response Team,
Rancho Bernardo, California, November 2003

PREPARED BY:
Greg Hill - Planning and Environmental Coordinator, BLM/PSSC FO
Joyce Schlachter - Wildlife Biologist, BLM/PSSC FO
Dianna Brink – Rangeland Management Specialist, BLM/CASO
Elena Misquez - Associate Field Manager, BLM/Palm Springs-South Coast FO

U.S. Department of the Interior
Bureau of Land Management
Palm Springs-South Coast Field Office

DECISION RECORD

CA660-04-20

Name of Project: Burned Area Emergency Stabilization and Rehabilitation Plan for the Otay, Cedar, Paradise and Old Fires

Decision: It is my decision is approve the proposed Burned Area Emergency Stabilization and Rehabilitation Plan (DOI BAER Plan) prepared by the Department of Interior Interagency Burned Area Emergency Response Team for BLM-administered public lands affected by the Otay, Cedar, Paradise and Old Fires in November of 2003. Compliance with the mitigation measures identified in the environmental assessment prepared by BLM (EA CA-660-04-20) is hereby required and incorporated into this decision record as stipulations.

Rationale: The DOI BAER Plan would help to immediately protect exposed resources, stabilize soils and minimize erosion in those areas affected by the Otay, Cedar, Paradise and Old Fires. Planned actions will stabilization and prevent unacceptable degradation to natural and cultural resources, to minimize threats to life and property resulting from the effects of these fires. Immediate action is needed to minimize adverse affects during the Fall months when rain is likely in Southern California. The DOI BAER Plan is in conformance with the following applicable lands use plans for BLM-administered lands: the *South Coast Resource Management Plan* (1994) and the *California Desert Conservation Area Plan* (1980 as amended).

Finding of No Significant Impact: Environmental impacts associated with the proposed action have been assessed in environmental assessment CA-660-04-20. Based on the analysis provided in the attached EA, I conclude the approved action is not a major federal action and will result in no significant impacts to the environment under the criteria in Title 40 Code of Federal Regulations 1508.18 and 1508.27. Preparation of an environmental impact statement to further analyze possible impacts is not required pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969.

Approved by: _____

Field Manager — Date
Palm Springs-South Coast Field Office
Bureau of Land Management
690 W. Garnet Avenue; P.O. Box 581260
North Palm Springs, CA 92258-1260

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Barona Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? ? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources (_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes)	(No)	
?	?	Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.
?	?	Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, BIA, Riverside, California (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Inaja-Cosmit Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern Califonria Agency, BIA, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
La Jolla Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Rincon Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
San Pasqual Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
San Manuel Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Santa Ysabel Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so,

local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Sycuan Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA)

Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside, CA (BIA)

Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

Southern California Complex Fires Burned Area Emergency Rehabilitation Plan
Viejas Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the Pony Fire BAER Plan. The Colorado SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so,
local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

BAER Team, Environmental Protection Specialist (BIA)
Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside CA (BIA)
Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Barona Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? ? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so,

local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

_____ _____

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern California Agency, BIA, Riverside, California (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Inaja-Cosmit Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

_____ _____

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern Califonria Agency, BIA, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
La Jolla Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

_____ _____

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Rincon Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

_____ _____

BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
San Pasqual Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted

CONCURRENCE AND SIGNATURES

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BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
San Manuel Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
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?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

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A NHPA Clearance Form:

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? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

I have reviewed the proposals in the 2003 SoCal Fires Burned Area Emergency Rehabilitation Plan in accordance with the criteria above and have determined that the proposed actions would not involve any significant environmental effects. Therefore, the plan is categorically excluded from further environmental (NEPA) review and documentation. BAER Team technical specialists have completed necessary coordination and consultation to ensure compliance with the National Historic Preservation Act, Endangered Species Act, Clean Water Act and other Federal, State, and local environmental review requirements. As the lead agency on the 2003 SoCal Fires BAER program, the superintendent of the Southern California Agency has initiated the necessary coordination with the affiliated tribal government to ensure compliance with applicable and relevant cultural resource laws and requirements.

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BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern California Agency, Riverside,CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Santa Ysabel Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
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?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

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? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

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? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

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? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so,

local agency integrated pest management specialists must be consulted.

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BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

_____ _____

Superintendent, Southern California Agency, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
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NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

2003 SoCal Fires Burned Area Emergency Rehabilitation Plan
Sycuan Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes)	(No)	
?	?	Adversely affects Public Health and Safety
?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
?	?	Relates to other actions with individually insignificant, but cumulatively significant environmental effects.
?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

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A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the 2003 SoCal Fires BAER Plan. The California SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes) (No)

? **?** Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.

? **?** Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

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BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside, CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

NEPA CATEGORICAL EXCLUSION DOCUMENTATION AND DECISION

Southern California Complex Fires Burned Area Emergency Rehabilitation Plan
Viejas Reservation

NEPA CHECKLIST: Based on 516 DM 2, Appendix 2, if any of the following exception applies, the BAER plan cannot be Categorically Excluded and an Environmental Assessment (EA) is required.

(Yes) (No)

? **?** Adversely affects Public Health and Safety

?	?	Adversely affects historic or cultural resources, wilderness, wild and scenic rivers, aquifers, prime farmlands, wetlands, floodplains, ecologically critical areas, or Natural Landmarks.
?	?	Has highly controversial environmental effects.
?	?	Has highly uncertain environmental effects or involve unique or unknown environmental risks.
?	?	Establishes a precedent resulting in significant environmental effects.
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?	?	Adversely affects properties listed or eligible for listing in the National Register of Historic Places.
?	?	Affects a species listed or proposed to be listed as Threatened or Endangered.
?	?	Threatens to violate any laws or requirements imposed for the protection of the environment such as Executive Order 11988 (Floodplain Management) or Executive Order 11990 (Protection of Wetlands).

NATIONAL HISTORIC PRESERVATION ACT

Ground Disturbance:

? None

? Ground disturbance did occur and an archeologist survey, required under section 110 of the NHPA will be prepared. A report will be prepared as specified by the BAER plan.

A NHPA Clearance Form:

? Is required because the project may affect sites that are eligible for or listed on the National Register. The clearance form is attached as the Cultural Assessment of the Pony Fire BAER Plan. The Colorado SHPO has been consulted under Section 106 (see Cultural Resource Assessment, Appendix I).

? Is not required because the BAER plan has no potential to affect cultural resources
(_____ initials of cultural resource specialist).

OTHER REQUIREMENTS

(Yes)	(No)	
?	?	Does the BAER plan have potential to affect any Native American uses? If so, consultation with affiliated tribes is needed.
?	?	Are any toxic chemicals, including pesticides or treated wood, proposed for use? If so, local agency integrated pest management specialists must be consulted.

CONCURRENCE AND SIGNATURES

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BAER Team, Environmental Protection Specialist (BIA) **Date**

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

Superintendent, Southern California Agency, Riverside CA (BIA) Date

( ) I concur and it is my decision to approve the plan.
( ) I do not concur because.

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

APPENDIX III PHOTO DOCUMENTATION

Individual photos not provided in electronic version.

THIS PHOTOGRAPH AND THE MAJORITY OF THE PHOTOGRAPHY IN THIS DOCUMENT WERE TAKEN BY KARI GREER, PROFESSIONAL PHOTOGRAPHER UNDER CONTRACT TO BAER.

INTERAGENCY
BURNED AREA EMERGENCY STABILIZATION AND REHABILITATION PLAN

2003 SOUTHERN CALIFORNIA FIRES

APPENDIX IV. SUPPORTING DOCUMENTATION

INDEX

Values at Risk Table

- **Watershed Treatment Table**
- **Specification Diagrams**
- **Flow Model Curve Numbers**

- **11/16/03 Memo to Kathy Griffin, California Buying Team, from BAER Team Leader, Subject: Specifications for Hydromulching Contract for BIA Treatment Areas Cedar, Paradise, and Old Fires**
- **BAER GIS Data Call 11/14/03**
  - **FTP Instructions**
  - **2003 So Cal Fires Schedule of Maps**